DECEMBER 12, 1955

How to Use Low-Cost Fuels . . . p. 36

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications

So much has been said about new products of Electro-Motive that there is a possibility one of our time-honored policies may be overshadowed in the minds of our railroad customers.

We assure you that the abilities which developed the Diesel Locomotive and, more recently, our new Mobile Power Car and new Oil-Drilling Power Unit, continue to be applied to the never-ending improvement of every part of General Motors locomotives---this to the end that they serve even better today and in the years to come.

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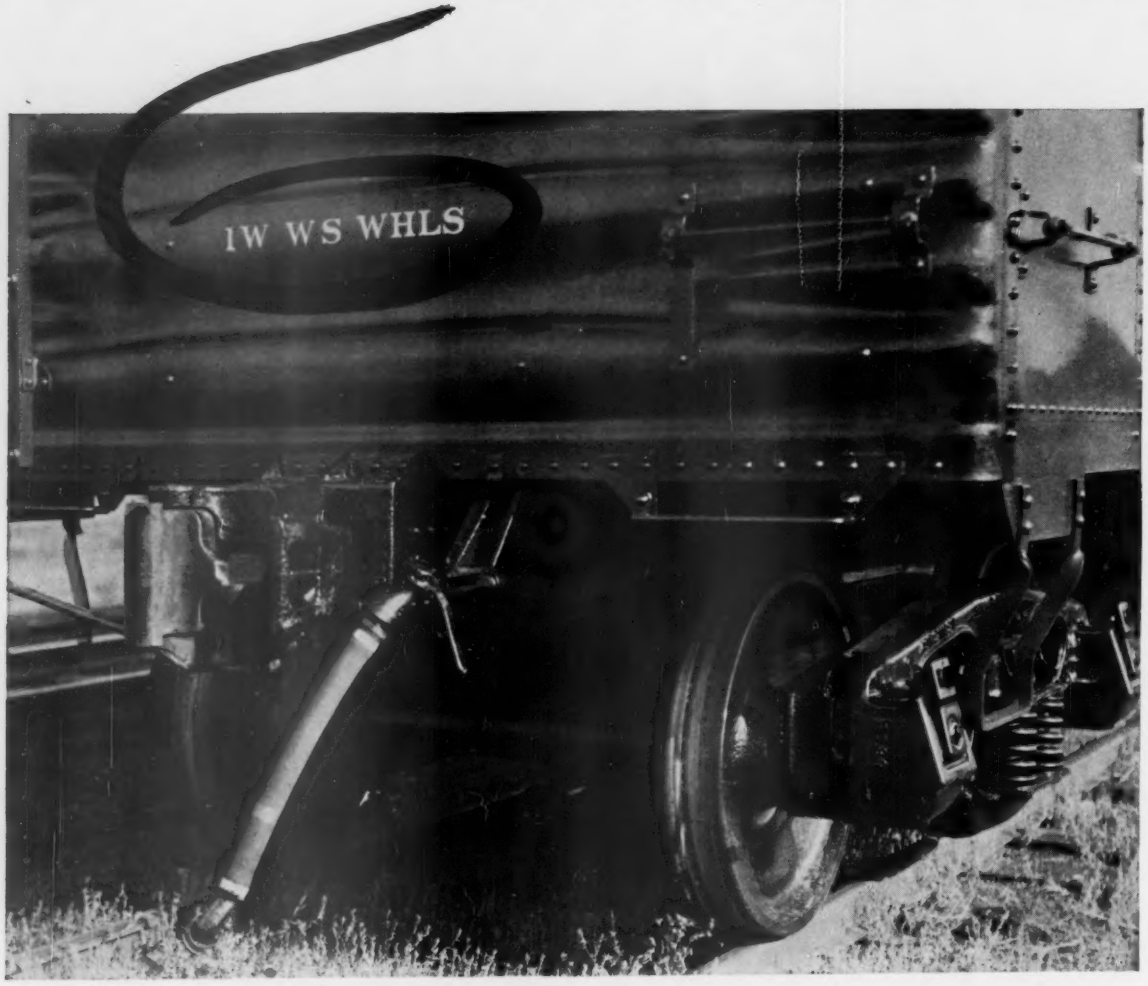

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SPECIAL STEELS

SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • ARMCO INTERNATIONAL CORPORATION

One of 700 new 70-ton hopper cars built at Bethlehem's Johnstown, Pa., plant for Western Maryland Railway. Note "Mayari R Steel" stencilled on side sheet above "D" in road-name lettering as an aid to repair and maintenance crews.

Tougher bodies for Western Maryland's 700 new 70-ton hoppers

The loading, hauling and unloading of coal have severe abrasive and corrosive effects on hopper car bodies. No railroad knows this better than the Western Maryland, one of the nation's principal carriers of coal.

Western Maryland also knows the solution to the problem, for several years ago this road put into service 100 hopper cars built largely of Mayari R high-strength low-alloy steel. Result: Mayari R's superior resistance to corrosion, abrasion and battering kept the cars in service longer, and lowered maintenance.

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Mayari R is readily weldable and workable without need for special shop facilities or techniques. It takes paint well and holds it up to 80 pct longer than ordinary carbon steel. It offers so many advantages to railroads, as well as users in other fields, that we've put the full story into an attractive catalog, a copy of which is yours for the asking. Just call or write our nearest office and ask for Catalog 353.

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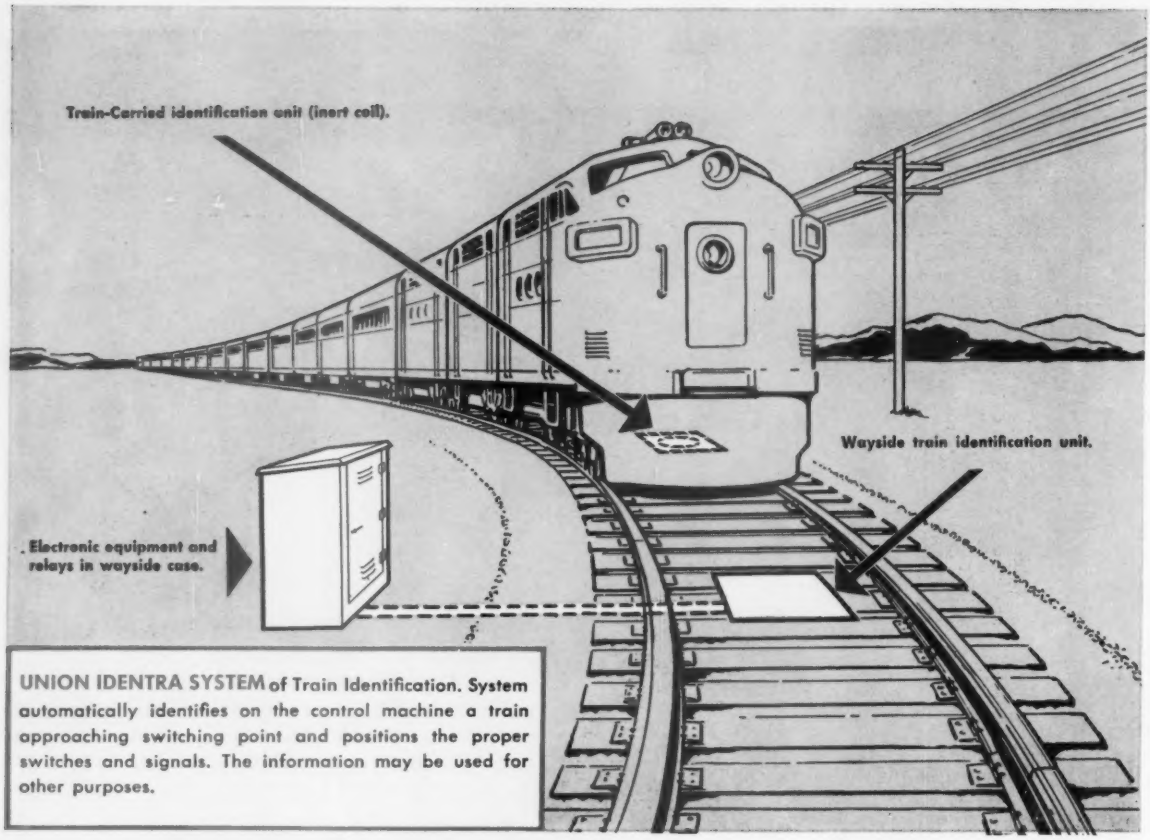
Train-Carried identification unit (inert coil).
Wayside train identification unit.
Electronic equipment and relays in wayside case.

UNION IDENTRA SYSTEM of Train Identification. System automatically identifies on the control machine a train approaching switching point and positions the proper switches and signals. The information may be used for other purposes.

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RAILROAD AUTOMATION?

IT'S HERE NOW! Many of the tools for railroad automation have been available for years. Recent developments have added more . . . and refinements on present systems will put additional operations under push-button control.

Some of the best examples of automation are Centralized Traffic Control, Automatic Train Control, Continuously Controlled Cab Signaling, Route Interlocking, and Automatic Freight Car Classification.

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With these tools, which have been developed to reduce operating costs, the railroads can have automation. With other costs rising, the only answer is—*more automation!*

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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December 12, 1955
Vol. 139, No. 24

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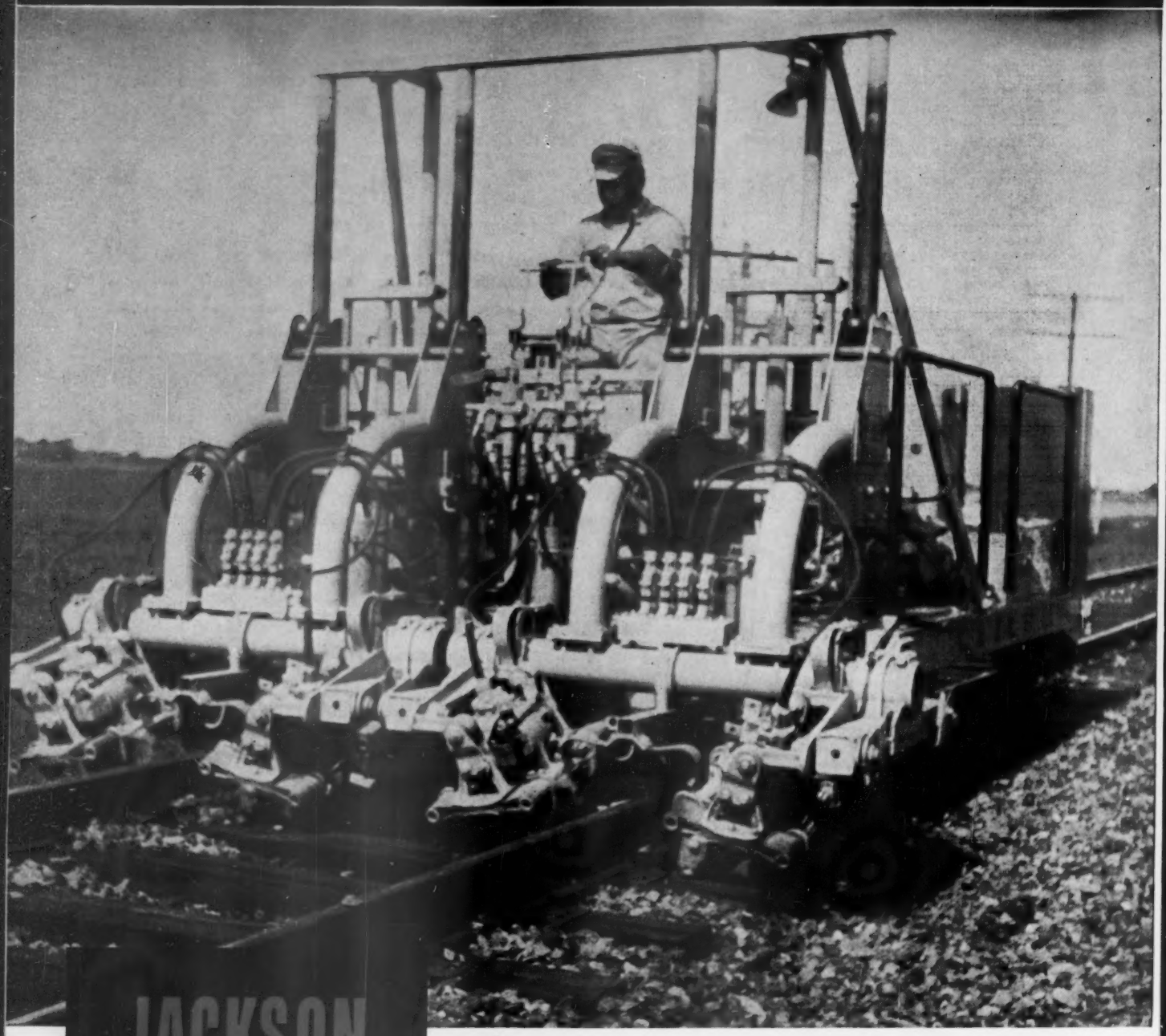

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Current Statistics

Operating revenues, ten months	
1955	$8,374,221,196
1954	7,780,406,868
Operating expenses, ten months	
1955	$6,294,360,120
1954	6,158,779,123
Taxes ten months	
1955	$ 923,043,139
1954	740,223,069
Net railway operating income, ten months	
1955	$ 947,241,229
1954	671,849,861
Net income, estimated, ten months	
1955	$ 753,000,000
1954	484,000,000
Average price railroad stocks	
December 6, 1955	100.18
December 7, 1954	81.94
Carloadings revenue freight	
Forty-seven weeks, 1955	34,466,493
Forty-seven weeks, 1954	30,867,185
Average daily freight car surplus	
Wk. ended Dec. 3, 1955	6,576
Wk. ended Dec. 4, 1954	33,859
Average daily freight car shortage	
Wk. ended Dec. 3, 1955	5,103
Wk. ended Dec. 4, 1954	340
Freight cars on order	
November 1, 1955	61,954
November 1, 1954	12,853
Freight cars delivered	
Ten months, 1955	29,710
Ten months, 1954	32,083
Average number of railroad employees	
Mid-October 1955	1,087,247
Mid-October 1954	1,005,145

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Week at a Glance CONTINUED

ductions are partially offset by added equipment, but emphasis is on less need for maintenance. . . . 43

Goodwill on a branch line is good business, the Rock Island figures. It makes money and pleases customers at the same time, running an annual "T-bone Special" to Chicago from one small Iowa community. . . . 46

Train runs by remote control on the New Haven, where an experimental set-up demonstrated techniques whereby "automatic" railroads come nearer realization. . . . 50

BRIEFS

Plans for a new freight rate increase for the nation's railroads continued under discussion last week. Final decision, still pending as this issue went to press, hinged on a meeting scheduled for December 9 in Washington, D. C. It looks like 7%, subject to holddowns on some commodities.

New rail laid in replacement last year cost an average of $103.87 per ton. The railroads laid 873,626 tons, thus spending a total of $90,744,000. This 1954 tonnage was the lowest in 14 years, but the cost per ton was highest. Comparable 1953 work involved laying 1,132,837 tons at a cost of $95.35 per ton. Biggest year of the 14, tonnagewise, was 1945, when 1,613,548 tons were laid at an average cost of $46.05 per ton.

Less-truckload rates, a further refinement of trailerload rates in piggyback service, are under active consideration by some roads. They figure such rates would help balance the one-way movements which have plagued a number of TOFC operations.

"Pure and unadulterated subsidies"—that's how John R. Staley, vice-president of Quaker Oats, feels about government expenditures on inland waterways. Mr. Staley recently told a congressional subcommittee that his company subscribes to the view "we should pay for the use of these federally improved waterways."

MORE CARS for your money

plus a BIGGER RETURN

per dollar of car investment

...with LOW-COST SOLID BEARINGS

When you buy new freight cars, you want the maximum in car availability and income-producing potential. Here's why you get it with solid bearing freight cars:

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3rd Suppose you don't *need* the extra 100 cars. Then you reduce your initial investment by approximately 10% and get the same increase in return *per dollar* represented by the $250,000 to $400,000 above.

Analyze the performance of solid bearings and you find that the average car has *only one set-off for bearing difficulties every 12 years* — even though this average car is almost 20 years old! You can bet that cars with high-cost journal bearing assemblies will have a tough time beating this record.

What's more, there are low-cost ways to improve solid bearing performance even further — cut maintenance and operating costs, too — and still keep the same big advantages of low initial investment and high earning power. Write us for complete information. Magnus Metal Corporation, 111 Broadway, New York 6; or 80 East Jackson Blvd., Chicago 4.

MAGNUS

Solid Bearings

* *Based on analysis of independent study of solid-bearing operating costs. Copies of analysis on request.*

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

October Net Up $15 Million

It was $92 million, according to AAR estimate; 10-month net was up $269 million, to $753 million

Estimated net income of Class I railroads in October, after interest and rentals, amounted to $92 million, compared with $77 million in October 1954, according to the Bureau of Railway Economics of the Association of American Railroads.

The month's net railway operating income, before interest and rentals, was $110,929,588, up $20 million from October 1954's $90,928,799.

Estimated net income for this year's first 10 months was $753 million, compared with $484 million in the like 1954 period. The 10-month net railway operating income was $947,241,229, compared with $671,849,861. The rate of return for the 12 months ended with October averaged 4.3%, compared with 3.11% for the 12 months ended with October 1954.

Fourteen Class I roads failed to earn interest and rentals in the first 10 months of this year. Eight of them were in the Eastern district, two in the Southern region, and four in the Western district.

CLASS I RAILROADS—UNITED STATES

	1955	1954
Month of October		
Total operating revenues	$ 907,635,887	$ 804,445,841
Total operating expenses	671,294,285	611,779,702
Operating ratio—percent	73.96	76.05
Taxes	102,798,152	81,916,541
Net railway operating income (Earnings before charges)	110,929,588	90,928,799
Net income, after charges (estim.)	92,000,000	77,000,000
Ten Months ended October		
Total operating revenues	8,374,221,196	7,780,406,868
Total operating expenses	6,294,360,120	6,158,779,123
Operating ratio—percent	75.16	79.16
Taxes	923,043,139	740,223,069
Net railway operating income (Earnings before charges)	947,241,229	671,849,861
Net income, after charges (estim.)	753,000,000	484,000,000

Freight Car Loadings

Loadings of revenue freight in the week ended December 3 totaled 728,216 cars, the Association of American Railroads announced on December 8. This was an increase of 51,531 cars, or 7.6%, compared with the previous week; an increase of 66,439 cars, or 10%, compared with the corresponding week last year; and an increase of 66,190 cars, or 10%, compared with the equivalent 1953 week.

Loadings of revenue freight for the week ended November 26 totaled 676,685 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, November 26

District	1955	1954	1953
Eastern	111,962	97,234	98,426
Allegheny	140,085	107,397	120,681
Pocahontas	52,159	42,855	41,289
Southern	118,462	107,338	106,371
Northwestern	87,738	70,087	72,425
Central Western	114,302	107,313	105,501
Southwestern	51,977	51,296	51,537
Total Western Districts	254,017	228,696	229,463
Total All Roads	676,685	583,520	596,230
Commodities:			
Grain and grain products	42,649	44,351	38,061
Livestock	9,757	8,596	8,804
Coal	129,560	106,288	105,204
Coke	12,924	8,498	10,594
Forest Products	36,331	37,521	36,018
Ore	50,349	17,783	24,715
Merchandise l.c.l.	53,831	53,630	56,311
Miscellaneous	341,284	306,853	316,523
November 26	676,685	583,520	596,230
November 19	771,648	697,346	725,732
November 12	796,632	708,749	727,058
November 5	808,709	696,026	747,868
October 29	835,396	736,233	780,843
Cumulative total, 47 weeks	34,466,493	30,867,185	35,324,799

In Canada.—Carloadings for the seven-day period ended November 21 totaled 80,456 cars, compared with 84,798 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 21, 1955	80,456	32,425
November 21, 1954	79,896	27,607
Cumulative Totals:		
November 21, 1955	3,646,467	1,463,446
November 21, 1954	3,283,909	1,265,673

AAR to Tell Story Of Rail Mail-Handling

The Association of American Railroads is developing a campaign to bring home to the public the nature of the railroads' role in handling mail. The campaign, to begin in January, will be aimed at the "postal family"—postal officials and personnel and all others associated with movement of mail—and the "postal user."

The program will be carried forward through advertising in principal postal journals; speeches by railroad representatives; displays and exhibits at conventions and in post offices and other public places; and distribution of motion pictures and literature describing rail mail-handling operations.

Law & Regulation

Common Program for Common Carriers

"Common carriers have a great deal in common" and "there is more traffic to be regained from private and unregulated transportation by all of them than they can take from each other," W. H. Schmidt, Jr., executive editor of *Railway Age*, said December 1 at the annual dinner of the Traffic Club of Minneapolis. Mr. Schmidt urged that regulated public carriers find a basic program upon which they can agree.

The speaker decried use of demagogic appeals to emotions in dealing with transportation regulation. "The whole subject is within the competence of only a small part of the population to decide. If you ask the man in the street—even most of your own employees—what a common carrier is, you will get only a blank stare.

ANNUAL BATTLE with "Old Man Winter" sees Canadian Pacific forces well-prepared with equipment like snowplow pictured here. Scenes like this will be typical if snow season matches those of other years, with cost of removal running to half-million dollars. CPR equipment includes two snow loader and melting tank units, four rotary and 198 wedge-type plows, 54 flangers for clearing rails, and 114 spreaders for pushing snow off tracks in freight yards.

IT LOOKS GOOD!—Mr. and Mrs. George M. Crowson prepare to delight their palates at the Paul Masson Winery in the Santa Cruz mountains near Saratoga, Cal. Mr. Crowson is assistant to the president, Illinois Central. After the recent annual meeting of the Public Relations Society of America many delegates stopped off to attend a wine-tasting party and champagne barbecue as guests of the winery.

"Actually," Mr. Schmidt said, "any new transport legislation will require the support of the shippers—or, more accurately, the professionally trained industrial traffic managers. It is an established fact that Congress is responsive to the voice of business in general when it comes to transportation matters. Regulations now in the law books were put there by business interests. So was legislation which commits government to subsidize certain forms of transportation."

The speaker went on to say that, in his opinion, education on transportation questions should be addressed primarily to the business community; and that, until this sector of the public is reached, there is no effective purpose served in expensive campaigns to reach the general public. Mr. Schmidt emphasized his belief that shippers are the people to whom the public will look for leadership on a question such as this. "At its latest annual meeting," he pointed out, "the National Industrial Traffic League, top spokesman of the shippers, went on record as opposing existing 'fair share' regulation and in favor of greater freedom for common carriers to compete."

ICC Will Regulate Vessel Chartering to U.S.

The Interstate Commerce Commission will resume on March 6, 1956, the regulation of water transportation involved in chartering vessels to the United States government. Such transportation has been exempt since 1942.

The 1942 exemption order has now been revoked by the commission. The revocation order was issued in the Ex Parte 152 proceeding out of which the exemption came. The proceeding was reopened recently for the purpose of determining whether the exemption should be ended (*Railway Age*, June 13, page 13).

ICC Drops Investigation Of Carrier Associations

The Interstate Commerce Commission has discontinued the proceeding it instituted last year to determine whether it should prescribe rules governing participation of carrier associations in commission cases.

The proceeding was Ex Parte No. 194. The discontinuing order said that no good cause had been shown for issuance of a report or entry of a mandatory order in the case.

ICC Proposes Revisions Of Accident Report Rules

The Interstate Commerce Commission has served notice of its plan to revise rules governing monthly reports of railroad accidents. The notice makes January 1 the effective date of the proposed changes, but the commission will consider objections filed before that time.

Proposed changes include one to increase to $750 the amount of damage to railroad property an accident must cause to be classified as a train accident. The amount is now $375.

Another proposed change would eliminate the requirement which calls for reports of injuries to employees who are off duty for less than three days but longer than the remainder of the shift on which the injury occurred.

People in the News

William E. Lee Dies; Was Member of ICC

Willian E. Lee, former member of the Interstate Commerce Commission, died in Washington, D.C., December 5. He was in his 74th year.

Mr. Lee retired as commissioner August 18, 1953, after having served in that position for more than 23 years.

A former chief justice of the Idaho Supreme Court, he was first appointed to the commission in 1930 by President Hoover. Reappointments came from Presidents Roosevelt and Truman.

ICC Elects Arpaia Chairman for 1956

Commissioner Anthony F. Arpaia has been elected chairman of the Interstate Commerce Commission for a one-year term beginning January 1.

The chairmanship was made vacant by the recent resignation of Commissioner Hugh W. Cross (*Railway Age*, December 5, page 15), and Commissioner Kelso Elliott, next in line under the commission's rotating system, "declined to accept for purely personal reasons," as the commission's announcement put it.

There have been reports that Commissioner Elliott plans to resign, but he has refused to confirm or deny such reports. His term has another year to run. His resignation would leave four vacancies on the commission, including that to come with the retirement of Commissioner J. Monroe Johnson, whose term expires at the end of the year. The others were created by the Cross resignation and the resignation of former Commissioner J. Haden Alldredge who has entered private practice of law.

Colonel Johnson, as the commission's senior member, has been acting chairman since Mr. Cross left on November 25, and he will continue to serve in that capacity until the end of the year. The Arpaia term will put the chairmanship back on a calendar-year basis. It has been on a fiscal year basis (July 1 to June 30) since 1952, but, prior to that time, it was on a calendar-year basis.

Commissioner Arpaia, a Democrat, was appointed to the commission in 1952 by President Truman. He succeeded former Commissioner John L. Rogers who resigned. At the time of his appointment, he was practicing law in New Haven, Conn.

Car Supply

"Teamwork Can Lick Car Shortage"

Railroads and shippers "together can lick this so-called car shortage problem, which may not be a car shortage at all but a short-usage of existing cars," William G. Peoples, vice-president system freight traffic, Southern Pacific, said last week in Eugene, Ore.

Speaking at a meeting of the Pacific Northwest Advisory Board, Mr. Peoples said that in times of so-called shortage shippers should make a special effort to load and unload cars more quickly and not to order more cars than are currently needed.

"By doing this shippers will help themselves and it will be far less costly than if railroads or government have to finance building cars that would be idle much of the time," he continued.

RRs Relieving Coal-Car Shortage

AAR President William T. Faricy has assured L. C. Campbell, president of the National Coal Association, that railroads have under way a program

C&O's UNIVAC began arriving December 1, when the first piece of the "electronic brain" leased from Remington-Rand by the railroad was moved by crane (above), into C&O offices on the fourth floor of Cleveland's Terminal Tower. Cost of preparing the fourth floor and installing Univac will approximate $160,000. The computer, expected to start full operation next spring, will work at first on freight revenue accounting, payroll accounting and property and allied accounting.

RAILWAY MARKET Outlook THIS WEEK

Lightweight Trains

► *"Aerotrain" Test on Rock Island.*—General Motors' "Aerotrain" is being tested on the Rock Island between Peoria, Ill., Silvis and Bureau; first test run was December 4.

► *UP Would Buy "Aerotrain".*—UP would like to buy some "Aerotrain" equipment if tests now underway demonstrate that train comes up to expectations, Arthur E. Stoddard, UP president, said last week; if possible, he added, "we hope to get one of the new GM lightweight trains early next year for a test run to Portland, Ore."

► *Exhibition Runs on NYC and PRR.*—Simultaneous exhibition runs with two sets of "Aerotrain" equipment will be made on the New York Central and Pennsylvania January 5; NYC's train will run between Chicago and Detroit, the PRR's in the New York-Washington area.

New Equipment

FREIGHT CARS

► *Canadian National.*—Ordered 2,625 cars; approximate cost $24,000,000; delivery expected next year; Eastern Car will build 700 50-ton box cars, 100 70-ton gondola cars; Canadian Car & Foundry, 900 50-ton box cars, 100 50-ton flat cars; National Steel Car, 400 50-ton box cars, 200 50-ton and 25 30-ton refrigerator cars; Marine Industries, 200 70-ton covered hopper cars.

► *Central of Georgia.*—Ordered 500 box cars, Pullman-Standard; estimated cost $3,400,000; delivery expected August 1957; authorized for construction in road's Macon, Ga., shops, are 25 covered hopper cars (cost $205,000), and 20 depressed center flat cars (cost $312,700).

► *Pacific Fruit Express.*—Will build 1,800 standard refrigerator cars and 200 mechanically refrigerated 50-ft cars in own shops; estimated cost exceeds $26,000,000; first cars expected to be ready for service by December 1956, with delivery of all anticipated by July 1957; 175 ice-bunker cars will be converted to mechanical refrigeration at cost of $1,700,000; work starts next March, with all cars expected to be in service by June.

PASSENGER CARS

► *New Haven.*—Use of double-deck cars to increase seats for commuters is being studied, William S. Carr, assistant to general manager, revealed last week.

MARINE

► *Pennsylvania.*—A steel diesel-electric tugboat which may become the standard "workhorse" for New York Harbor's railroad fleet recently was launched for the PRR by Bethlehem Steel Company's Staten Island yard; major features of the craft—a sister tug

RAILWAYS IN THE MARKET—THIS WEEK

CONTINUED

of which, still under construction, will be launched later this month —are being considered by the General Managers Association of New York.

New Facilities

► *Canadian National.*—Projects under way or newly completed at Hamilton, Ont., include land purchase at Stoney creek for planned 1,000-car yard; doubling capacity of 14-track, 750-car Parkdale Avenue yard; installation, with CPR, of "several hundred thousand dollars worth of signalling equipment" on bay shore lines; new wye track between beach and Grimsby lines; new underpass on Ottawa street; cost $1,000,000.

► *Chesapeake & Ohio.*—Constructing three-story yard office and yardmaster's tower, modern communications system, improved diesel setup and modern icing facilities, in connection with Detroit-Windsor freight operations via the New York Central's Detroit river tunnel.

► *Jersey Central Lines.*—Recent opening of a new Dunellen, N. J., station has completed a $6.5 million highway grade crossing elimination project begun June 1, 1953; five busy highways between Middlesex, N. J., and Plainfield were bridged; a new passenger coach storage yard was built at Plainfield, as well as new approaches and interlocking facilities.

► *Southern Pacific.*—Acquired 84 acres of land near Eugene, Ore., for industrial development; additional acreage adjacent to the SP's has been acquired by other private interests; combined properties, totaling some 300 acres, will become a planned industrial area.

► *Union Pacific.*—First of two "650" computers rented from International Business Machines will be installed in Omaha early next year; it will simplify payroll processing, and make available current statistical wage information; new computers also will be used in other data-processing operations to minimize manual labor.

which will relieve the shortage of cars for shipments of bituminous coal.

The assurance came in Mr. Faricy's reply to a letter wherein Mr. Campbell outlined the bituminous industry's car supply problem and offered to help "with the Office of Defense Mobilization, or other appropriate organizations, to assure railroad car builders of an adequate supply of steel and other necessary materials to assure an adequate car supply." Mr. Faricy expressed his appreciation, and suggested that the proffered assistance "can be most effective if your industry will urge upon the steel industry the importance of greater allocation of steel to railroad heavy repair and car building programs."

The Campbell letter went to presidents of all Class I railroads with a copy to Mr. Faricy. The NCA president reported that his industry was "gravely concerned" about its present and future car supply; and he went on to conclude from figures he cited that the open-top fleet has "steadily deteriorated."

The "bitter facts," as Mr. Campbell put it, are that railroads "did not take care of the bituminous coal movement this year, and are not likely to be able to take care of it next year" unless remedial action is taken along three lines. The proposed remedies were calls for stepped-up repair programs and expedited delivery of the new cars on order; "more equitable" allocation of open-top equipment; and prompt loading and unloading by shippers and prompt handling by carriers.

The Faricy letter cited the surplus figures of October 1954, which showed the surplus of hopper cars was then, percentagewise, "consistently greater than the percentage of hoppers to total ownership of all equipment." Under such circumstances, the AAR president added, "it was not economically possible for the railroad industry to maintain equipment up to the usual standard or to make commitments for the purchase of new equipment comparable with those of normal years."

Mr. Faricy then went on to report how the backlog of bad-order hoppers has been reduced this year as railroads neared their goal of cutting it to 4% of ownership. He also called attention to the car-buying program now under way. As to the latter, he added: "The rapidity with which these cars can be constructed and made available to shippers of coal and other commodities will depend to a large extent on obtaining an adequate supply of steel and component parts so as to permit prompt construction."

Shortages in Good Times Laid to Meager Earnings

Car shortages in good times result from railroads' inability to save enough to tide them over prolonged spells of light traffic, Eugene W. Coughlin, manager of railroad relations, AAR Car Service Division, said in St. Louis recently. Addressing a meeting of the Trans-Missouri-Kansas Shippers Board, Mr. Coughlin said such was the case in 1954 when carloadings fell 12% under 1953, revenue ton-miles dropped 9%, operating revenues 21%, and net income 25%.

While shippers could not be blamed for not giving railroads more freight to haul in 1954, Mr. Coughlin said, neither could railroads be faulted for not spending money to build cars they didn't need. He urged shippers and receivers to aid railroads during the present tight supply situation by making better use of cars at their disposal while railroads speed up their car handling procedures and proceed with extensive carbuilding programs.

Harold F. Hammond, executive vice-president of the Transportation Association of America, told the board that "shippers and general public are in a position to tip the scales in 1956 on proposed legislation affecting carriers one way or another." For that reason, he said, they should understand the proposals made to Congress by the Cabinet Committee on Transport Policy and should "carefully weigh the issue and express their views."

Briefly . . .

. . . **Military personnel** in uniform can continue to travel at "furlough" rates until January 31, 1957, thanks to extension of the reduced fares to that date by the railroad's Interterritorial Military Committee. The tax exempt, round-trip coach fares—amounting to 2.025 cents a mile or less—were to have expired January 31, 1956.

new Pennsylvania RR pier
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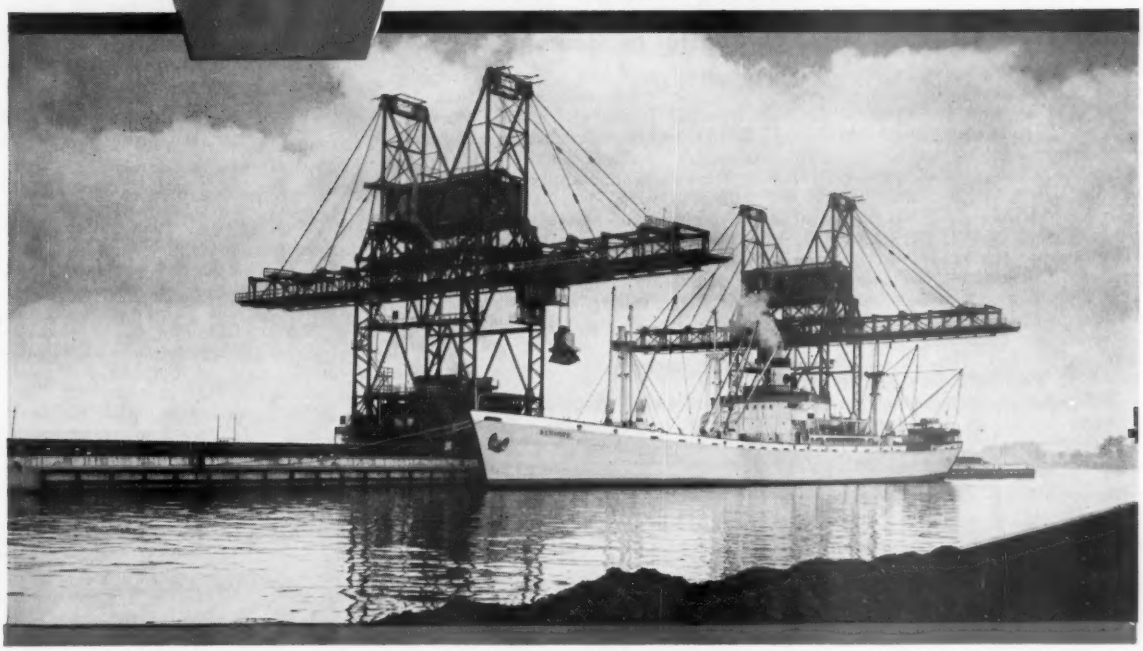

60 tons a minute! Seems incredible, but that's the production pace set by these two giant Industrial Brownhoist ore unloaders at the new Pennsylvania Railroad pier in Philadelphia, Pennsylvania. Towering over both pier and ocean-going ore vessels, the two enormous Brownhoist machines—each with a free-digging capacity of 1800 tons per hour—provide this ore terminal with the most modern and efficient unloading facilities in the United States. They can travel the full length of the pier and lower apron extensions from either side to obtain a reach of 72 feet from the dock. Each huge 25 ton capacity bucket rolls out, takes a bite, rolls back on the apron to drop its contents into a 100-ton receiving hopper, then rolls out for another bite. Time elapsed from bite to bite? *Just 45 seconds!*

The same engineering experience that made these Brownhoist ore bridges possible has also resulted in other fine Brownhoist materials handling equipment . . . locomotive cranes, wrecking cranes, car dumpers, traveling bridge cranes, buckets. If you have a heavy duty materials handling problem, it will pay you to discuss it with our engineers at Brownhoist.

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BROWNHOIST

Financial

Canadian Roads Must Use New Accounting System

Canadian railways must adopt a uniform and simplified system of accounting under an order of the Board of Transport Commissioners at Ottawa. The Canadian National and Canadian Pacific will employ the new methods starting January 1, while smaller roads have been given an additional year to comply.

The standard system is intended, among other things, to shorten future rate cases involving railroad revenues. At the same time the Transport Board will be given a closer check on the roads' operations through a Bureau of Accounts and Cost Finding, which has been set up to police the new system.

Frisco Would Take Control of Central of Georgia

The St. Louis-San Francisco has asked the Interstate Commerce Commission to approve its direct control of the Central of Georgia through ownership of capital stock.

The application said that Frisco, as of November 25, held 158,197 shares of CofG's 337,236 shares of common stock and 81,512 of its 170,417 preferred shares. It also said the applicant proposes to build these holdings to a majority, which would involve acquisition of 14,118 more shares. However, no concerted buying program is planned. The 239,709 shares now held cost the Frisco $15,289,688.

Frisco's interest in southeastern territory would be extended to the Atlantic seaboard at Savannah, Ga., as a result of the proposed acquisition, the application pointed out. It also said Frisco anticipated it would be able to influence movement of "considerable" traffic through Savannah.

Meanwhile, the application had referred to what it called a "tendency on the part of certain rail lines" in southeastern territory to restrict routings, thereby decreasing the number of routes available to shippers. Frisco expressed willingness to keep open all CofG gateways and to change such situations only as the commission might approve.

Boston & Maine.—*McGinnis Directorship Application.*— The ICC has further postponed, from December 13 until January 10, the date for resuming hearings at Boston, Mass., in the case involving Patrick B. McGinnis' application for authority to serve as president and director of this road while continuing as president of the New Haven (*Railway Age*, December 5, page 72).

Chicago Great Western.—*Delaware Incorporation.*— The ICC has approved reincorporation of this road, domiciled in Illinois, as Chicago Great Western, Inc., of Delaware (*Railway Age*, August 22, page 15).

Missouri-Kansas-Texas. — *New Exchange Plan.*—This road's directors have given preliminary approval to a plan whereby its preferred stockholders may exchange their holdings on the following basis: One share for $50 of a new series G 4½% Prior Lien Mortgage bond, $50 of new convertible 5% income debentures; and a $50 certificate constituting a charge on income. The bonds would mature in 35 years, the debentures in 50. The certificates would have no maturity and bear no interest. The debentures could be converted on the basis of one share of common stock for $50 of debentures. No dividends could be paid on the common until all certificates had been retired. The board is to review the plan for final approval by January 5, following which it would be submitted to the ICC and stockholders. Announcement of the plan follows by about four months the road's withdrawal of an earlier Mahaffie Act recapitalization plan.

New York, New Haven & Hartford.—*Stock Option Plan Approved.* —The ICC has authorized this road to issue 200,000 shares of no-par common stock for sale to employees and officers (*Railway Age*, August 8, page 58). Included are blocks of 25,000, 10,000 and 2,000 shares reserved for purchase at $34.25 per share by, respectively, Patrick B. McGinnis, president, William K. Tate, vice-president —freight traffic, and Harvey E. Hales, chief mechanical officer. The ICC also approved issuance by the road of 1,073,046 shares of no-par common stock to be exchanged on a share-for-share basis for a like amount of $100 par common stock now issued; and to issue 1,183,333 shares of no-par common to be exchanged on a share-for-share basis for an equal number of shares of $100 par common stock now reserved for conversion of the road's 5% series A preferred (*Railway Age*, March 7, 1955, page 54). Commissioner Elliot dissented, stating that the United States District Court for Connecticut should have approved the stock reclassification prior to action by the commission due to the court's "reservations of jurisdiction in the consummation order and final decree . . . involving the reorganization" of the New Haven.

Pecos Valley Southern.—*Stock Dividend.*—This road has applied to

RADIO-EQUIPPED TRUCKS like this one are being used in Union Pacific pick-up and delivery service at Omaha, Neb., and Council Bluffs, Iowa. Use of the Motorola units saves up to an hour's time daily for drivers who formerly kept in touch with the dispatcher's office by telephone. Two-way communication has virtually eliminated late afternoon pickup logjam.

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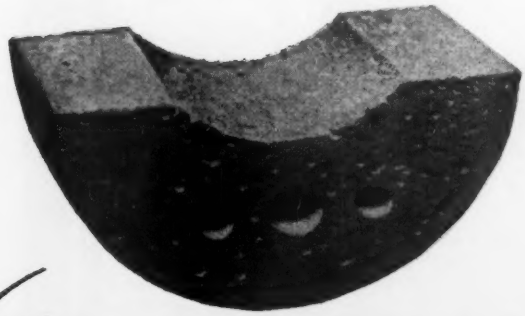
You owe it to your own operations to get the whole story. *Write, wire or phone for complete information.*



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ESSO STANDARD OIL COMPANY — Boston, Mass. — Pelham, N. Y. — Elizabeth, N. J. — Bala-Cynwyd, Pa. — Baltimore, Md. — Richmond, Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — New Orleans, La.

the ICC for authority to increase its capital stock from $45,000 to $810,000 by paying a stock dividend of 17 shares ($100 par) on each share now outstanding. The proposal would increase the number of shares from 450 to 8,100. That would "more clearly express the capital worth and provide more adequate control of surplus for retention in the corporation," the application said.

Pennsylvania.—*Merger of Subsidiaries.*—This road and several of its subsidiaries have applied to the ICC for approval of arrangements designed to effect some intra-system mergers. The arrangements contemplate merger of the Pittsburgh, Cincinnati, Chicago & St. Louis and Delaware, Maryland & Virginia into the Philadelphia, Baltimore & Washington; merger of the New York Bay into the United New Jersey Railroad & Canal Co.; merger of the Pennsylvania, Ohio & Detroit into the Connecting; and merger of the Elmira & Lake Ontario into the Northern Central. They also contemplate that leases under which PRR operates the PCC&StL, the PO&D, the NC and the Bay will be modified to accord with the merger plans, and that the commission will approve continued control by the PRR and Pennsylvania Company after the mergers.

Western Maryland. — *Arrearages Elimination Plan.*— The ICC has approved this road's plan for paying $19,250,070 of accumulated dividend arrears (*Railway Age*, August 8, page 59). Under the authority granted, the road may issue 128,597 shares of no-par common stock to be sold at not less than $41 per share, and 594,158 shares of no-par common to be exchanged on a share-for-share basis for 532,868 shares of $100-par common outstanding and 61,290 shares of $100-par second preferred stock. Proceeds from sale of common stock —to be offered to present stockholders on the basis of one new share for six shares of any class held—would be used, along with funds from the road's treasury to pay off the dividend arrearages.

Authorization

SPOKANE INTERNATIONAL.—To issue a promissory note for $700,000 to evidence a loan for that amount, proceeds of which are to be used to pay $240,000 in notes outstanding and to finance in part rebuilding of a bridge expected to cost about $500,000. The road would issue $363,600 of income mortgage 6% bonds, series C, and $60,000 of 4½% income mortgage bonds, series A, and pledge them as security for the note together with $290,000 of 6% income mortgage bonds previously issued.

Applications

CENTRAL PACIFIC.—To issue, nominally, $25,190,000 of series C first mortgage bonds for which the Southern Pacific Company would also assume liability as guarantor. The bonds, dated August 1, 1955, and having an interest rate of 3½% and a maturity date of August 1, 1984, would be held in the CP treasury in reimbursement of capital expenditures made between 1944 and 1955. They would not be sold without commission authorization, not sought in the present application.

NEW CONSOLIDATED YARD AND SHOP facilities (above), now under construction by the Kansas City Southern and Louisiana & Arkansas at Shreveport, La., will replace three old terminal operations. New facilities include an office building, freight house, five-track diesel shop, car repair facilities, eight yard receiving tracks, and 31 yard classification tracks. The project will cost an estimated $8 million and is to be completed early in 1956.

ILLINOIS CENTRAL. — To assume liability for $8,700,000 of equipment trust certificates to finance in part the acquisition of 70 1,750-hp. diesel-electric road switching locomotives from the Electro-Motive Division, General Motors Corporation. The unit cost of the locomotives is estimated at $167,314 and the total cost at $11,711,980. The certificates, dated January 1, 1956, would mature in 30 semi-annual installments of $290,000 each, beginning July 1, 1956. They would be sold by competitive bids which would fix the interest rate.

NEW YORK CENTRAL.—To sell to its affiliate, Despatch Shops, Inc., the $6,600,000 issue of equipment trust certificates for which authorization is sought in a pending application (*Railway Age*, November 28, page 40). The original application proposed sale of the certificates on the basis of competitive bids, but the proposed sale to Despatch, now made in the supplemental application, includes a plea for relief from the commission's competitive bidding requirements. The interest rate would be 3½%, a more favorable basis than it could place the issue through competitive bidding, the applicant advised the commission.

PENNSYLVANIA.—To assume liability for $11,595,000 of equipment trust certificates to finance in part acquisition of 1,870 freight cars (listed below) at an estimated total cost of $15,463,190.

Description and Builder	Estimated Unit Cost
630 70-ton hopper cars (Bethlehem Steel Company)	$7,853
500 70-ton hopper cars (ACF Industries, Inc.)	7,838
500 Flat cars (PRR shops)	9,500
240 70-ton covered hopper cars (Pullman-Standard Car Manufacturing Company)	7,695

The certificates would be sold on the basis of competitive bids which would fix the interest rate, and they would mature in 15 annual installments of $773,000 each, beginning January 1, 1957.

READING.—To extend to January 1, 1971, the maturity date of $1,500,000 of first mortgage bonds of the Port Reading. The Reading holds the entire issue except $2,000 which it expects to acquire before the extension. The present maturity date is January 1, 1956.

SOUTHERN PACIFIC.—To assume liability for $9,600,000 of equipment trust certificates to finance in part acquisition of 46 1,750-hp diesel-electric freight locomotive units from the Electro-Motive Division of General Motors Corporation, and 382 50-ton box cars, which would be built in SP shops. Twenty-three of the locomotives would be 6-axle units and 15 of these would be acquired at an estimated cost of $227,065 each, and the other eight at $216,220 each. The remaining 23 would be 4-axle units and their estimated unit cost is $178,494. The box cars would include 250 equipped with loaders and their estimated unit cost is $10,178. The remaining 132 would cost $7,756 each. Total cost of the equipment would be $12,809,389. The certificates, dated January 1, would mature in 15 annual installments of $640,000 each beginning January 1, 1957.

TEXAS CITY TERMINAL.—To issue a 5-year note for $750,000 to the City National Bank of Houston. Proceeds, along with $130,317 of treasury funds, would pay the unpaid balance of a loan obtained in 1946 to call a bond issue. The new note, bearing interest at 4%, would be payable in 59 monthly installments of $10,000 each and a final installment of $160,000.

TEXAS & PACIFIC.—To assume liability for $1,400,000 of equipment trust certificates to finance in part 150 50-ton box cars and 47 50-ton flat cars to be built in T&P shops at an estimated total cost of $1,977,732. Thirty-five of the box cars, which would be insulated and equipped with loaders, are expected to cost $12,741 each; 15 equipped with loaders are expected to cost $11,915 each; 40 with double doors, $8,965 each; and the remaining 60, $8,384 each. Estimated unit cost of the flat cars is $10,456. The certificates, dated January 1, 1956, would mature in 10 annual installments of $140,000 each, beginning January 1, 1957. They would be sold by competitive bids which would fix the interest rate.

Security Price Averages

	Dec. 6	Prev. Week	Last Year
Average price of 20 representative railway stocks	100.18	99.96	81.94
Average price of 20 representative railway bonds	97.63	97.71	97.44

Dividends Declared

ATCHISON, TOPEKA & SANTA FE.—common, $3 extra, payable January 13, 1956, to holders of record December 16; $1.25, quarterly, payable March 1, 1956, to holders of record January 27; 5% preferred, $1.25, payable February 1, 1956, to holders of record December 30.

DELAWARE & HUDSON.—$1, quarterly, payable December 28 to holders of record December 12.

LAKE SUPERIOR & ISHPEMING.—35¢, quarterly, payable January 15, 1956, to holders of record January 15; extra, 60¢, payable December 15 to holders of record December 15.

MAINE CENTRAL.—6% preferred, $1.50, quarterly, payable January 3, 1956, to holders of record December 23.

MASSAWIPPI VALLEY.—$3, semiannual, payable February 1, 1956.

(More News on page 58)

Letters from Readers

"This Per Diem Business"

NEW YORK

TO THE EDITOR:

May I comment on "Mr. X's" letter on uniform per diem, page 31 of *Railway Age* for November 7?

Each of the roads objecting to the increase in the uniform per diem rate on August 1, 1953, had its own magic formula for modifying the uniform rate and thus curing all the inequalities thereof. Mr. X would apply all these several magic formulas, multiplying the resulting chaos and confusion at least arithmetically, and perhaps geometrically.

The end result would certainly be everyone's complete dissatisfaction. If the monetary result was less than under the uniform rate, the car user would have spent the difference in accounting costs, and the car owner would be twice the loser. If the resulting payment under Mr. X's plan was higher than the uniform rate, the car owner would spend his gain on accounting, and the user would be the two-time loser.

The accounting people would certainly not be "happy" with Mr. X's plan; it is their fundamental duty to be unhappy about anything that will increase expenses more than revenues. And regardless of catchy phrases, the only brains available to the industry for the performance of this job are those of the accounting people —analysts, programers, and operators who make the decisions which the machines, completely lacking brains, cannot make for themselves.

"Y"

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WASHINGTON, D. C.

TO THE EDITOR:

There is only one satisfactory settlement to "this per diem business." It is so simple that it is almost unbelievable that the railroads and the Interstate Commerce Commission have not adopted it.

The Solution—The per diem rate based on the cost of owning cars should be prescribed by the ICC each year, based on statistics as to the total cost of car ownership, either for the preceding year, the last two preceding years, or the last three preceding years. This should not be a group of rates varying with age of cars or rates based both on time and mileage, as there is nothing inherently wrong with the present use of an average for all cars.

Why do I reach these conclusions?

1. It must be recognized that in the very nature of railroad operations some railroads will always be per diem credit lines (roads which predominantly originate interline traffic). Other roads are naturally per diem debit lines (roads which terminate more interline traffic than they originate and roads which predominantly handle overhead traffic). Obviously, any railroad which is a per diem credit line has a financial interest in seeing the per diem rate as high as possible. Conversely, a per diem debit line has a monetary interest in seeing the rate as low as possible.

Your anonymous Mr. X feels that railroad management could solve this problem by proper use of "imagination and discipline." I am sure that every possible thing that could be imagined has been used to try to get the New Haven and B&M and NYS&W and a bunch of per diem debit short lines to go along with the recent increases in the per diem rate, but no amount of imagination could sell them something which means money out of their pocket. I think the use of the word "discipline," in this case, is naive, because the antitrust sleuths would certainly go into action if any attempt were made to force acceptance of increased per diem by these lines who have exercised their right of independent action.

Fallacious Reasoning

2. The idea that per diem should vary according to age of cars is fallacious, because studies show that the revenue which a using line earns on a particular car does not fluctuate in accordance with the car's age. In other words, we do not find that the earnings on a shipment in a newer box car are higher than on a shipment in an older box car. On the contrary, if cars are properly maintained, regardless of age, the revenues accruing to the using road will be just as great on the older car as with the newer car, and in many instances, greater.

3. The theory of basing per diem on a combination of time and mileage was introduced by the Long Island in the last big per diem case. Being relatively a short line, this basis would, of course, reduce its per diem expense. It does not follow, however, that because miles per car per day on the LI are less than on other lines the wear and tear on cars in its possession is less. I have an idea that probably more damage to cars, or wear and tear, if you please, is caused in switching than in road-haul movement, and the number of terminal handlings of cars on a road like the Long Island with its low miles per car per day probably is greater than on some other lines, particularly overhead lines showing a much higher miles per car per day.

Mr. X does not put his finger on the real cause of controversy. He says that it is the result of the insistence of large car-owning lines that a uniform rate be effective throughout the country except for per diem reclaims allowed qualified short lines. On the contrary, the real point of controversy is as to what items shall be included in the cost of car ownership, i. e., the formula used in working up the per diem rate.

The largest single argument is as to whether depreciation should be calculated on the basis of the book value of the cars or on the basis of reproduction costs. This difference of opinion alone accounts for 25¢ per car day, the rate based on reproduction costs, of course, being higher under present conditions. In the per diem case now pending for decision before the ICC, the lines mentioned above and a large number of short lines have attacked the present $2.40 rate, and the examiner's proposed report which adopts the calculation of depreciation on book value would reduce the rate to $2.10 per car day. It is possible that in the present case the commission may prescribe a rate and prescribe a formula to be used for the future, but did not do so when a similar case was before it in 1948.

Puzzled

I cannot understand one thing about the controversy which has existed in the past few years about per diem. The arguments and the cases before the ICC have, in a large measure, been presented on behalf of short line railroads which do not own any cars. By reason of that fact they are, of course, per diem debit lines. However, under the per diem rules, short line railroads can apply for per diem relief, and it is a fact that most of them receive a free time allowance, which means that they do not actually pay the established per diem rate for each day that the cars are in their possession.

While as indicated a case is pending before the ICC in which the per diem rate itself is attacked, the short line railroads also filed another case before the ICC in which they attacked the method by which the per diem rate is adopted. This complaint, Docket 31774, was filed on behalf of 79 complainants.

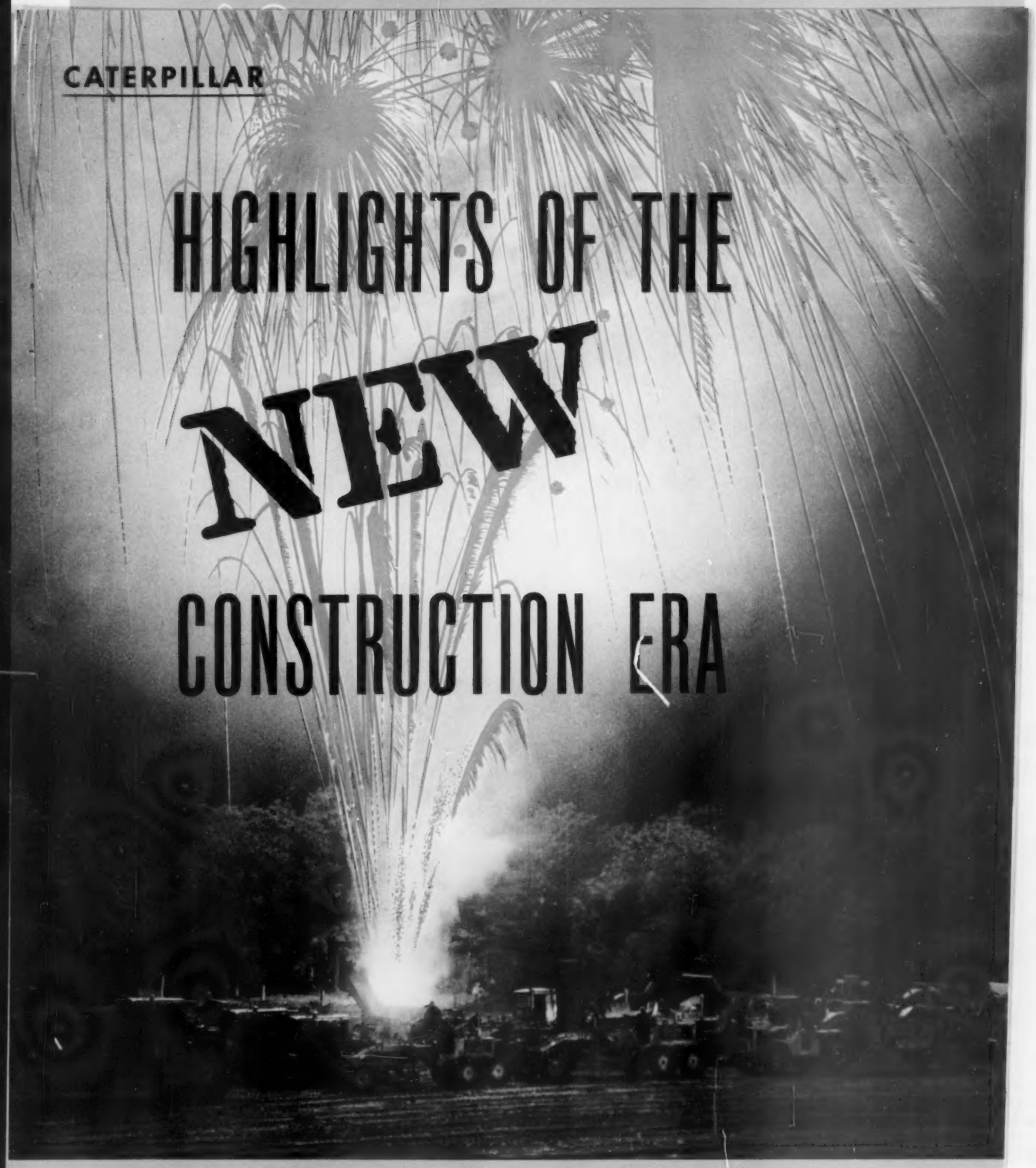
My analysis shows that of the 79 complainants, 52 were short line railroads receiving relief from per diem costs and seven were switching carriers which are made whole on per diem through switching reclaims. I secured actual records covering all cars handled by 46 of these short lines during the year 1954 and found that they had 200,019 freight cars on line, a total of 597,610 days, which represents a total per diem accrual of $1,427,066.40. However, they were allowed a total reclaim of $753,188.80 and actually paid $673,205.60, or an average of $1.13 per car day for each day that the cars were actually in their possession. Even the most ardent advocate of low per diem has not had the temerity to suggest that under present conditions the per diem rate should be as low as $1.13 per car day.

I do not desire anonymity.

A. F. SWINBURNE
Executive Assistant
Car Service Division
Association of American Railroads

CATERPILLAR

HIGHLIGHTS OF THE NEW CONSTRUCTION ERA



Never before in history has the equipment industry faced such a tremendous challenge as today. We are entering what might well be called the "construction era." Right now construction is the greatest single factor in our industrial economy, employing 12% of our total labor force. And construction can never move forward by itself. Its progress is dependent upon increased production in mines and forests, cement mills and steel plants. Caterpillar Tractor Co. is matching these new opportunities with an array of new products that will increase production, cut maintenance costs, work longer and more profitably than any other equipment on the market. These Caterpillar-built products are the result of continuing research in the laboratory and in the field. They are forceful evidence of Caterpillar Leadership in Action. See them on the following pages.

NEW in track-type tractors!

The new D9

This new giant is a bear for work. Choice of torque converter or exclusive oil clutch drive. First track-type tractor with Turbocharger. Completely new 286 HP engine. "Live-shaft" drive for rear-mounted equipment. Many other important features.

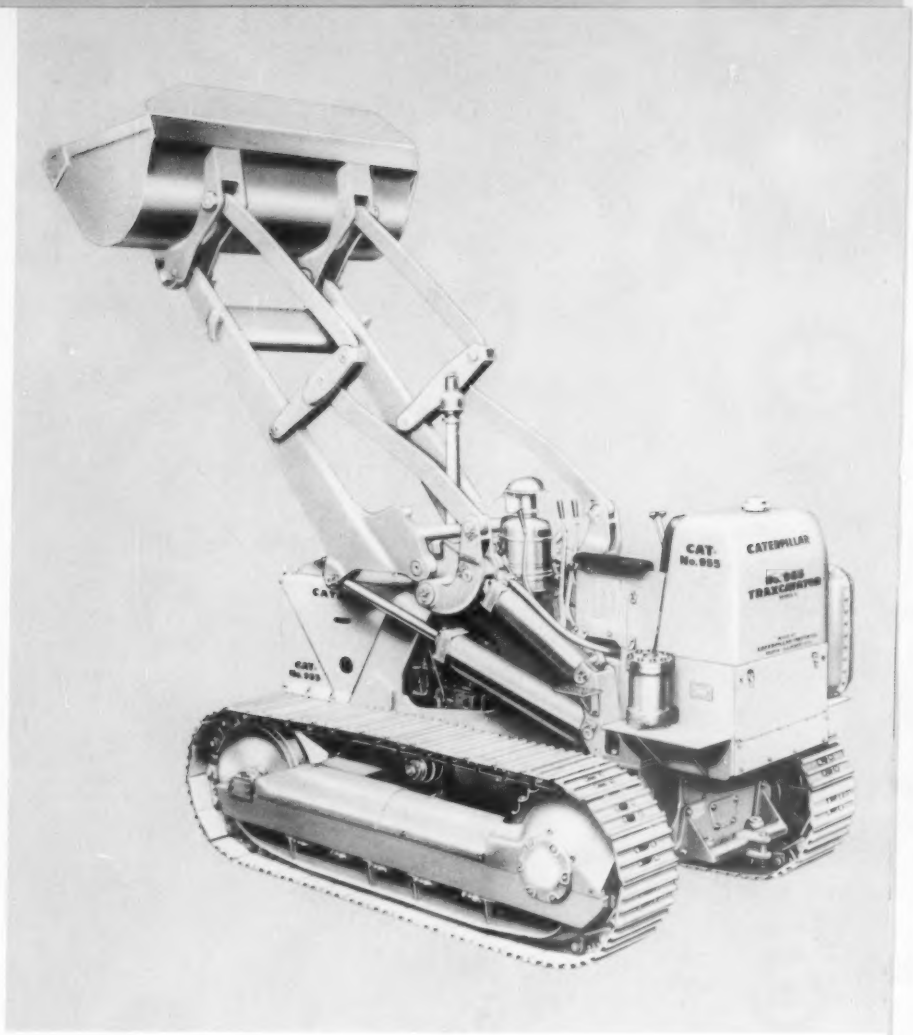
The new D8

With torque converter (Series D) or direct drive (Series E). Completely new 191 HP engine. "Live-shaft" drive for rear-mounted equipment independent of flywheel clutch. New easy controls. Many other improvements. Shown with new Cat No. 463 LOWBOWL Scraper.

LEADERSHIP IN ACTION

The new D7 (Series C)

New 128 HP engine. Drawbar pull 28,700 lb. maximum. Exclusive oil clutch. Finger-tip steering. New starting engine for easier operation. Track shoes hardened by "*water quench*" process (also on D8 and D9). Many other important advances.



No. 955—1½-yard capacity

Balanced for bigger production at lower cost. Major features: 40-degree bucket tip-back at ground level, new oil-type clutch, convenient lift and dump levers, modern hydraulic system, high reach, "designed in" operator comfort, optional starting and versatile attachments.

NEW in Traxcavators!

No. 933—1-yard capacity

Like its bigger brother, *balanced* to outproduce ordinary tractor-shovels of equivalent capacity. Also backed by *one* manufacturer to provide you the advantages of single manufacturing responsibility and one service source. Major features—same as the No. 955!

LEADERSHIP IN ACTION

NEW in wheel-type tractors!

The new DW21 Tractor ▲

(Series C.) New 300 HP Caterpillar Engine with Turbocharger. 10% more rimpull. New No. 470 LOWBOWL Scraper. 18 cubic yards struck, 25 cubic yards heaped capacity. New, wide-section 29.5-29 tires give big-footprint flotation and maximum traction. Many other new, thoroughly tested features.

The new DW15 Tractor ▶

(Series C.) 186 HP valve-in-head Caterpillar Engine. Speeds up to 24 MPH (31.3 MPH with optional gears) pulling loaded wagon or scraper. Heavy-duty clutch has air booster. Air brakes. Wide range of speeds: 10 forward, 2 reverse.

The new DW20 Tractor

(Series E.) Shown with new No. 456 LOWBOWL Scraper. This great new team highballs up to 32.1 MPH for fast cycle times. Same 300 HP engine with Turbocharger and wide-section tires as DW21. LOWBOWL design loads more material in less time by using tractor and pusher power at maximum efficiency.

LEADERSHIP IN ACTION

NEW in pipelayers!

The new No. 583

Here, for the first time, is a pipelayer that is *all* pipelayer—not a tractor attachment. It's the most efficient, highest capacity pipelayer in history. Lifting capacity of 130,000 pounds and 21-inch clearance. Three-stage torque converter in main drive and new hydraulically actuated counterweights. Stability is unequalled. A heavy-duty constant-mesh pipelayer winch transmission drives directly from the engine. Many more important advances, all designed to produce more profits for pipeliners.

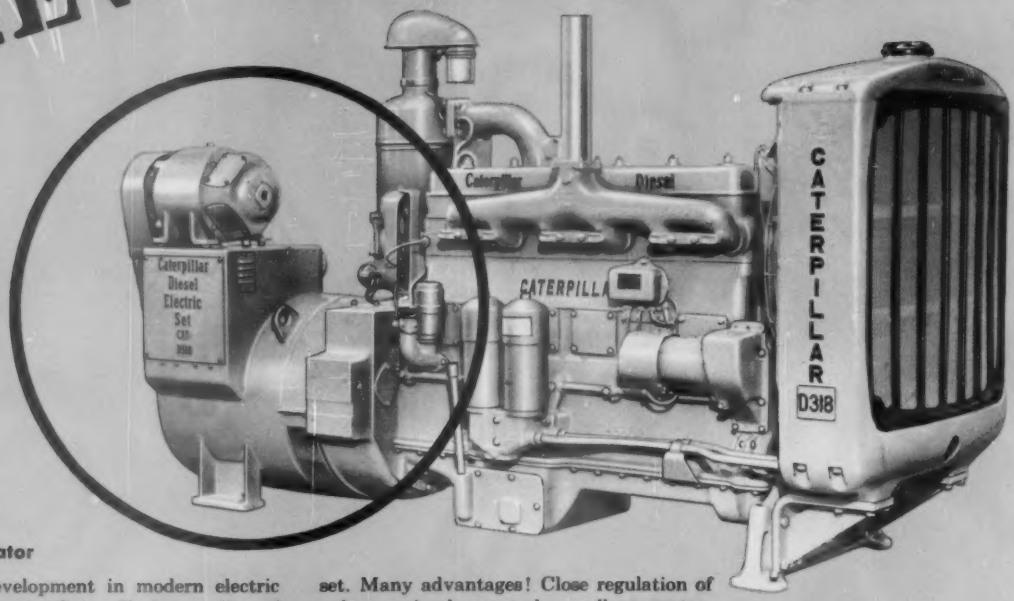
NEW in motor graders!

The new No. 12 with oil clutch

With the addition of the job-proven oil clutch, the big, versatile No. 12 Motor Grader gives you more economy and efficiency than ever. The new clutch increases work life since the constant oil bath lubrication reduces wear on all moving parts. There is less maintenance; 1500 hours without adjustment is not unusual and no external lubrication is needed. The new No. 12 is more efficient because the clutch is constantly cooled, eliminating clutch fade and slippage due to overheating.

LEADERSHIP IN ACTION

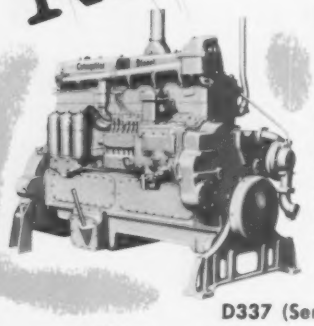
NEW in generators!



Cat Generator

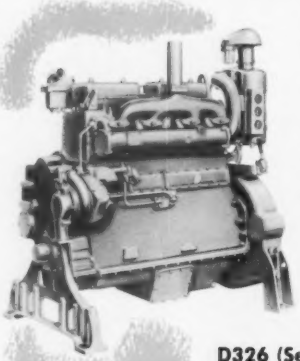
A major development in modern electric power. Brings to Caterpillar's new line of Diesel Electric Sets the efficiency of the externally-regulated set in a self-regulated set. Many advantages! Close regulation of voltage, simple control, excellent motor-starting ability, easy hook-up with other generators . . . 100% backed by Caterpillar.

NEW in diesel engines!



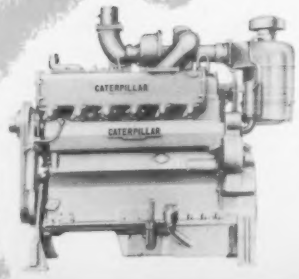
D342—210 HP maximum @ 1200 RPM

Incorporates the latest advances in modern, compact, heavy-duty diesel design. Offers better operation, less maintenance, higher horsepower. Choice of 3 starting systems—air, electric, gasoline. Like all Caterpillar Engines, burns wide range of fuels without fouling.



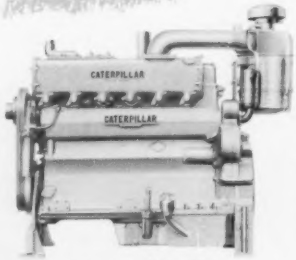
D339—140 HP maximum @ 1200 RPM

Combines new compactness with greater efficiency, economy and higher horsepower. A modern, heavy-duty 4-cylinder unit with new smoothness of operation. Choice of 3 starting systems. Many other advantages, including full-flow filtering system.



D337 (Series F) with Turbocharger 310 HP maximum @ 2000 RPM

New Turbocharger utilizes exhaust heat to drive supercharger, delivers air in proportion to engine's need. New hydraulic valve lifters practically eliminate adjustment, provide quiet operation. Greater displacement for more power. Choice of 3 starting systems. Available as Electric Sets and Industrial Engines with complete line of attachments.



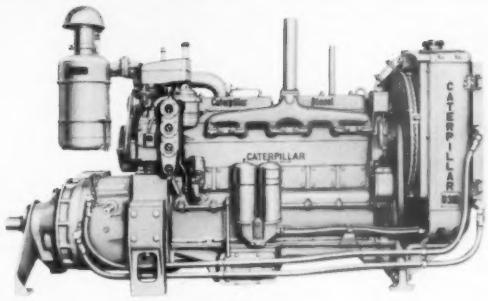
D326 (Series F)—200 HP maximum @ 2000 RPM

Like other new, heavy-duty Cat Diesels, offers you more for your money than any engine in its power range. Many major features, including hydraulic valve lifters and full-flow filtering. Greater displacement for more power. Choice of 3 starting systems. Available as Electric Sets and Industrial Engines with complete line of attachments.

LEADERSHIP IN ACTION

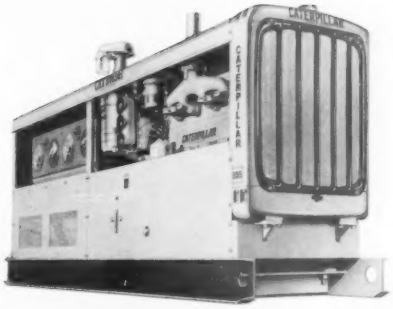
NEW in torque converters!

Caterpillar now offers a wide choice of torque converter power units in standard packages. Torque output is automatically matched to load for smooth load starts or control of load without use of clutch. Overloads can't kill engine. Your Caterpillar Dealer can supply these units. He also has full facilities and parts for service.



NEW in welders!

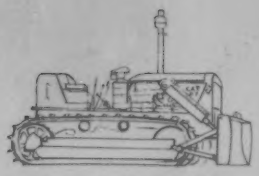
The new Caterpillar Twin Arc-Welder provides one engine, one base, and TWO 300-ampere welding generators. Four-cycle Cat Diesel picks up load instantly without missing or injector trouble. Compact design cuts transport and maintenance cost. Operators can weld at different voltages at same time. Single (3 KW) exciter cuts weight and size, provides ample excitation plus plenty of 115-V. DC for auxiliary tools.



NEW in portable electric sets!

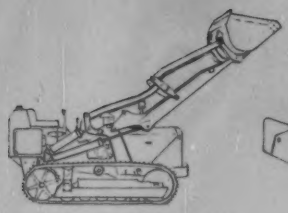
Cat Portable Electric Sets are now available in nine models, 30 to 315 KW, and in all usual voltages, 50 to 60 cycle. They're complete units with cooling system, fuel tank and switchgear, mounted on skids, semi-trailer or full trailer. Easy to hook up and operate, ready to work anywhere.

LEADERSHIP IN ACTION

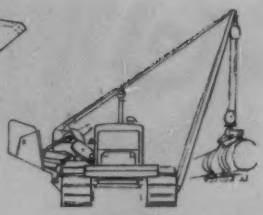


TRACK-TYPE TRACTORS

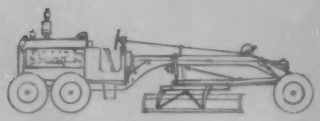
WHEEL-TYPE TRACTORS



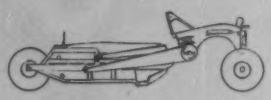
TRAXCAVATORS



PIPELAYERS

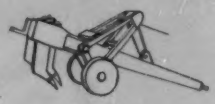


MOTOR GRADERS

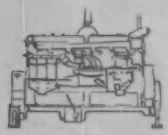


SCRAPERS

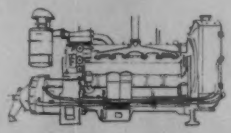
BULLDOZERS



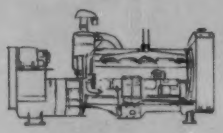
RIPPERS



INDUSTRIAL ENGINES

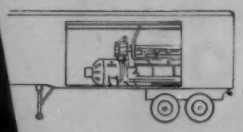


TORQUE CONVERTERS

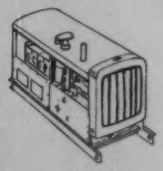


GENERATORS

FOR YOU CATERPILLAR LEADERSHIP PROVIDES THE MOST COMPLETE LINE IN THE INDUSTRY



PORTABLE ELECTRIC SETS



WELDERS

Year after year you have seen the results of Caterpillar leadership. It is always in action. It never stands still. The full resources of Caterpillar research, both in the laboratory and right in the field with you, are constantly devoted to improving products and developing new ones. This means that Caterpillar is your partner in progress, bringing you better and better products, greater opportunities for profitable work. Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

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LEADERSHIP IN ACTION

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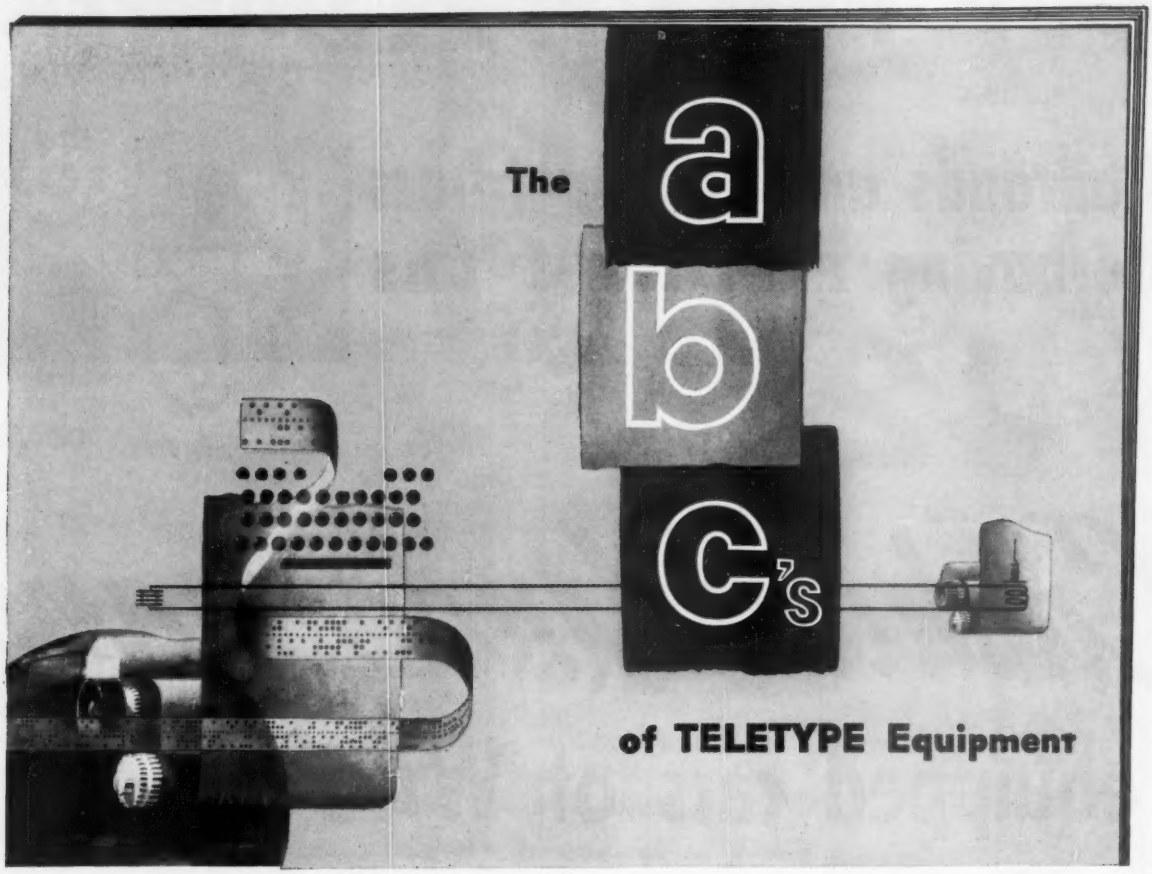

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Revised and expanded, the booklet covers the operation and uses of Page Printers, Perforators, Reperforators, and Transmitter Distributors... explains the Baudot code and how code pulses are dispatched over a signal line... touches on relaying systems and integrated data processing... and cites some of the imaginative ways users apply Teletype apparatus to solve a variety of communication and other problems.

Written in nontechnical language, *The ABC's of Teletype Equipment* is a useful primer on printing telegraphy. If you would like a copy for yourself, or to pass along to members of your staff, just fill in the coupon and drop it in the mail. There is no charge, of course.

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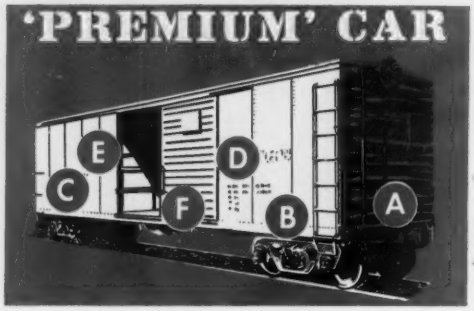
GOOD NEWS FOR SHIPPERS!



Railroads and Car Operators are buying 'PREMIUM' cars

4256

Cushion Underframe

equipped cars of WAUGH design

now in revenue service under construction or on order.

'PREMIUM' CARS

To ship

DRY ICE

20 Waugh High-Capacity Waugh Cushion Underframes now in service, and 25 Waugh Super-Capacity Waugh Cushion Underframe cars now under construction.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

Bananas

'PREMIUM' CARS

The record of Cushion Underframe cars in banana shipments shows much less lading damage than for cars equipped with any other type of cushioning device.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

MEAT

A large midwest packer is using 800 Waugh Cushion Underframe cars, showing a phenomenal record of lading protection. Over an 18 months period, meat-down damage is just short of zero.

WAUGH *Cushion Underframe*

WAUGH EQUIPMENT COMPANY NEW YORK

'PREMIUM' CARS

To ship

AMMUNITION

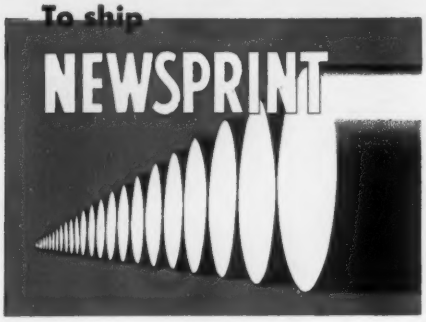
Currently 880 Waugh Cushion Underframe cars are being used to safeguard shipments of shells from Ordnance plants.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

NEWSPRINT



Newsprint from Northern paper mills is being shipped regularly in Waugh Cushion Underframe cars, with practically no lading damage.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

Beer

To reduce present high lading damage in beverage shipment, a western railroad has ordered Waugh Cushion Underframe cars for earliest possibly delivery.

WAUGH *Cushion Underframe*

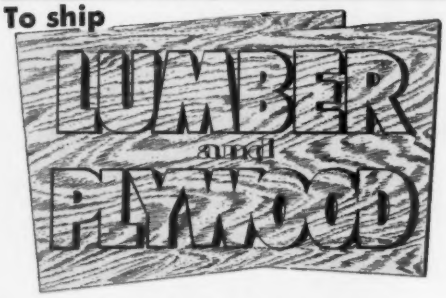
PREMIUM cars, Waugh Cushion Underframe equipped, assure extraordinary and proven protection for lading. Waugh equipped cars roll safely at high speed. Waugh High-Capacity Cushion Underframe *cushions* the pull-outs, run-ins, and classification yard impacts.

Shippers give unstinted praise for lading-guarding Cushion Underframe cars. Railroads, too, find that the extra protection reduces car repairs and increases car availability and revenue mileage.

More than 100,000 Waugh (and their Duryea prototype) Cushion Underframe cars are now in service. For car and lading protection, for more satisfied customers, equip new cars with Waugh High-Capacity Cushion Underframes.

'PREMIUM' CARS

To ship



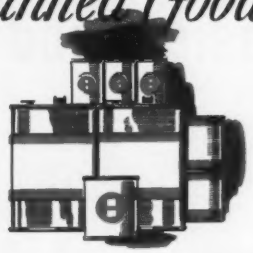
700 Waugh High Capacity Cushion Underframe box cars on order by one railroad. Of these, 500 with 15′ doors to facilitate loading lumber and pulpwood. Balance of order, box cars for shipment of all types of fragile lading.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

Canned Goods



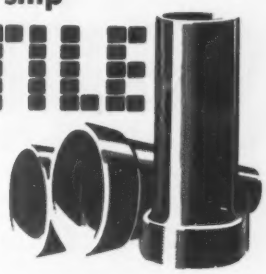
Waugh Cushion Underframe cars, bought by one railroad for shipping canned goods and other normally high damage claim lading. 100 cars on order.

WAUGH *Cushion Underframe*

'PREMIUM' CARS

To ship

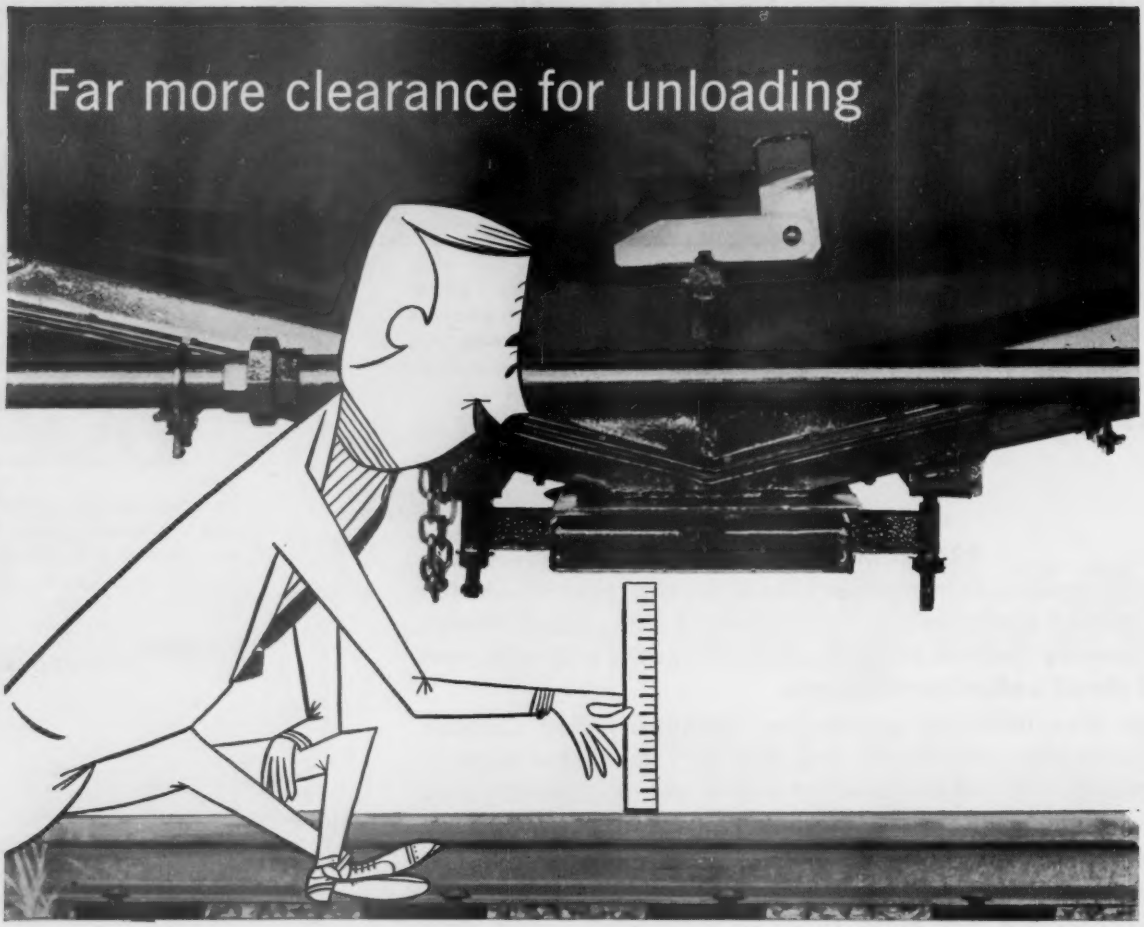
TILE



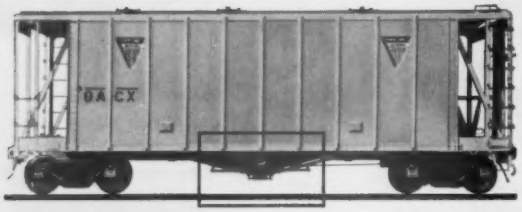
Waugh Cushion Underframe equipment has set a record for practical elimination of lading damage in the regular shipment of tile — normally very high damage-claim freight.

WAUGH *Cushion Underframe*

CHICAGO ST. LOUIS Canadian Waugh Equipment Company, Montreal



Bulk shipping of dry, granular and powdered products in General American Airslide® Cars is safer, easier—and costs less!



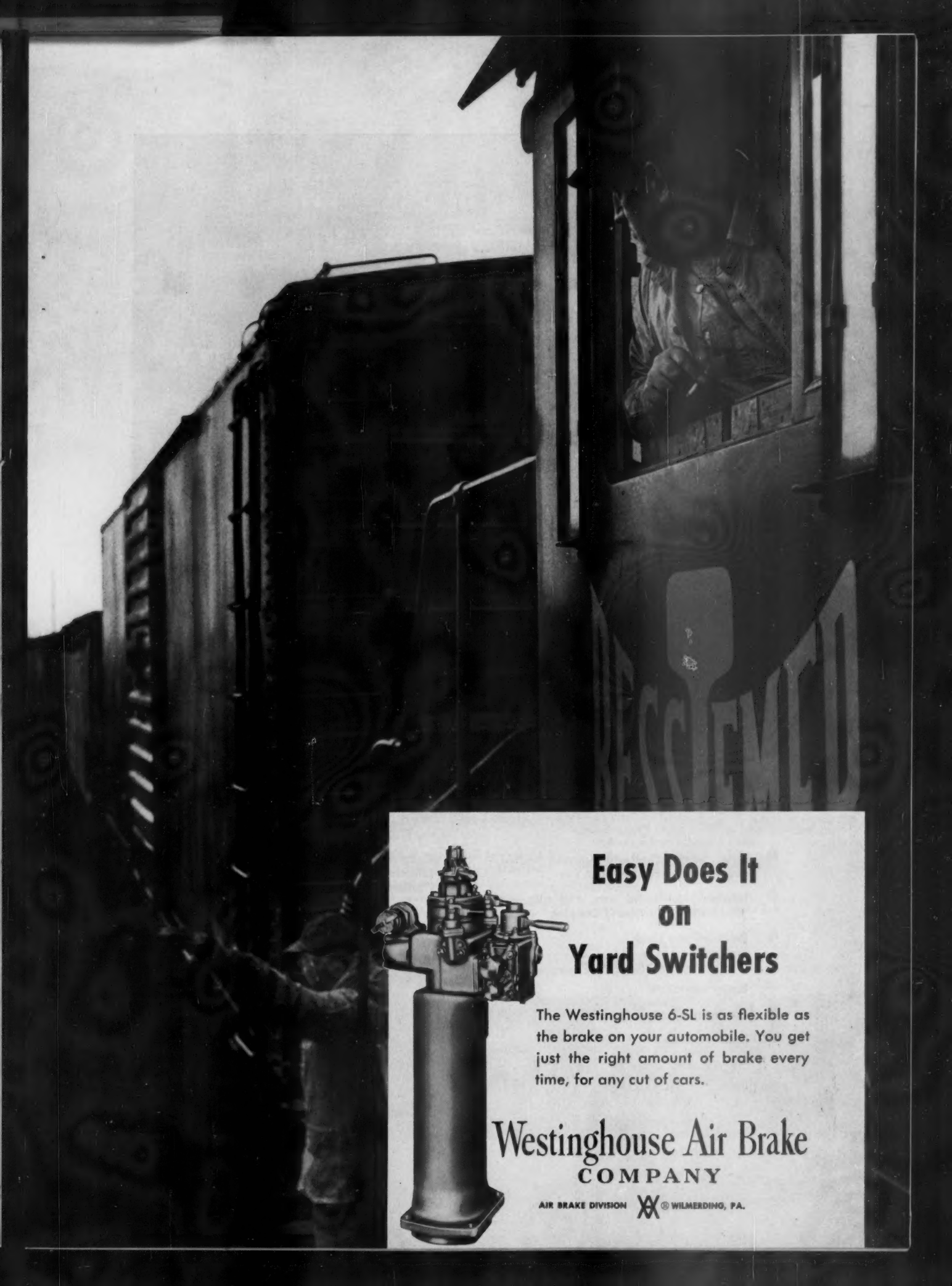
Over 1000 Airslide Cars now in service or on order. A small blower is all you need to unload cars into any conveying system. Write for bulk shipping information on your products.

AIRSLIDE GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South LaSalle Street, Chicago 90, Illinois

Airslide cars now successfully shipping flour, semolina, sugar, starch, plastics, chemicals and other products



Easy Does It on Yard Switchers

The Westinghouse 6-SL is as flexible as the brake on your automobile. You get just the right amount of brake every time, for any cut of cars.

Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION ® WILMERDING, PA.

TYPE F INTERLOCKING COUPLER and ATTACHMENTS

plus Buckeye DEPENDABILITY

STRIKING CASTING
. . with precompressed
flexible coupler carrier

. . adds up to longer, trouble-free service!

- New Safety Shelf—to support mated coupler in event of pullout.
- Interlocking—Guard arm and aligning wings similar to type H Coupler.
- Reduced free slack.
- Improved positive anti-creep.
- Easier operation.
- Increased strength.
- Reduced wear.
- Coupler, Yoke, Follower, and Striker interchangeable as a group with present standards.

FOR COMPLETE INFORMATION . . CALL or WRITE
Refer Adv. No. 11878
Ask for Bulletin No 202. .

The Buckeye Steel Castings Co.
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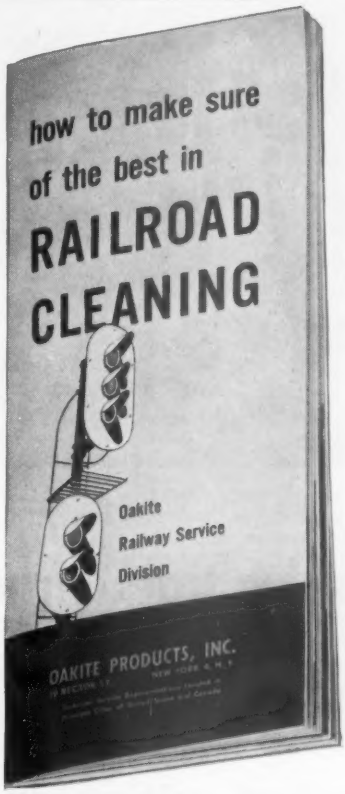
★ NEW YORK, N.Y.
★ CHICAGO, ILL.
★ ST. PAUL, MINN.

Just One Idea!

taken from this
FREE 56 page booklet
can save money
for your road
. . .help do many
maintenance jobs easier,
faster, safer



Between the covers of this 56-page booklet you will find described and illustrated many job-tested cleaning short-cuts. It's the kind of practical, down-to-earth information that can lead to better maintenance and overhaul of steam and Diesel power.

You can be Sure of the BEST in Railroad Cleaning . . .

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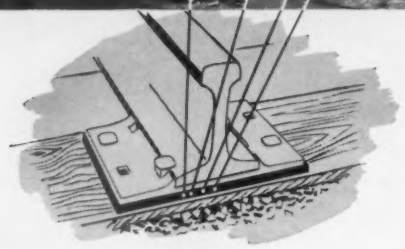
SCIENCE
RAILWAY DIVISION

You can't afford tie failure in bottleneck areas...



Cushion track structures with J-M Tie Pads... prevent cutting and abrasion

TIE REPLACEMENT IS SO COSTLY and troublesome... particularly in critical areas... every track program should provide for Johns-Manville Tie Pads.

J-M Pads absorb impact shock, help isolate the transmission of noise and vibration. They serve as durable protective cushions, seal out dirt and moisture, prevent abrasion and cutting.

Formulated for low compressibility, high recovery and low plastic flow, J-M Tie Pads offer good resiliency and flexibility over the widest temperature ranges encountered in service. They are resistant to creosote, diesel and lubricating oils, brine, water and freezing and thawing.

Available in all standard sizes, J-M Tie Pads are furnished plain, or with a special coating on one side. For detailed information on Tie Pads or other Johns-Manville products, get in touch with your J-M Representative, or write Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville** 97 YEARS OF SERVICE TO TRANSPORTATION

What's New in Products

Steam Cleaning Gun

This solution-lifting steam gun uses the cleaning solution to protect the operator from the heat of the steam. The Hurriclean, as it is called, uses a tube within a tube—steam passing through the insulated interior tube and solution through the exterior tube. Vacuum formed by steam emerging from the center tube draws solution into the nozzle for mixing. The gun has a sealed rotary joint making it possible to rotate the nozzle without twisting or wrestling heavy solution or steam hoses. While the front of the gun revolves to clean at any desired angle, the handle and hose connections remain stationary. The gun was designed so that thrust from the steam is taken up between the two grips.

The gun has a cast aluminum spade-type rear handle, cast brass valves, stainless outer and inner tubes and nozzle, and an oil resistant forward grip. Only moving parts are the valves and the rotary joint. A stainless tip protects the nozzle. Steam at 30 psi and connections to a container of cleaning solution are all that are required to use the gun. Steam and solution valves can be adjusted to produce best cleaning. To rinse, the solution valve is shut off and only steam is used. The gun weighs 6¾ lb in the 3½-ft length. The 5-ft model weighs a little more. *Oakite Products, Inc., 146 Rector st., New York 6* •

Vending Machine

An in-plant vending machine, offering hot plate meals and soups, has been developed jointly by the H. J. Heinz Company and Mills Industries. Two years of testing preceded announcement of the new service, which is available for industrial plants, shops, etc.

To obtain food from the machine, a customer simply inserts a coin in the proper slot of the machine and the meal is automatically served in the original container at a 150-degree temperature.

Each vending machine is designed to carry six varieties of foods and holds 144 portion-size tins. The vending machine promises simple maintenance with no tubes, tanks or valves to clean. Coin mechanism may be ordered as desired in order that companies may determine the price to be charged for various food items. Distribution of the vending machines is through Mills Industries. Foods will be furnished through Heinz sales offices in principal cities.—*H. J. Heinz Company, Pittsburgh, Pa.* •

Crane Control Conversion

Infrequently used overhead cranes can be made floor-operated instead of cab-operated with specially designed package controls. The pendant control operation is said to produce large annual savings with a small investment. Separate package control units have been designed for trolley, bridge and hoist controls, and can be supplied for a-c or d-c applications. Each of the individual steel cabinets is 20-¼-in. high and 13-in. deep. Widths vary with the number of control components necessary. The lighter components such as contactors, timers and relays are front mounted and are easily removed. Resistors are rear mounted. *Westinghouse Electric Corporation, Merchandise Mart, Chicago 54.* •

Center Door Posts to Cut Bulk Shipment Losses

A center door post has been developed to fit any size box car with no structural changes to the car. The post carries 75% of the tremendous weight in box car doorway openings to protect the regular wooden door posts from severe damage such as splitting and twisting. It also stops the coopering nails from pulling out of the regular wooden door posts, thereby eliminating a major cause of paper grain door failures.

This Claim Saver Center Door Post strengthens the doorway area by adding an intermediate support between the regular door posts. In this way it is said that cars with wide doorways can be used successfully for grain and other bulk commodities.

The post also saves coopering material, since a 6-ft doorway box car, so equipped, reportedly can be coopered with a single course of only eight wooden door panels instead of the twelve panels ordinarily used, saving approximately $8 per car in coopering material.

When not in use, both posts are recessed and locked into the side wall of the car, flush with the lining, completely out of the way, with no projection to rip or tear bagged loads.

The posts are pushed into position in seconds.

When in use the posts lock into the floor plate and leave about 3 in. clearance between the outside surface of the post and the storm door. *Railroad Engineering Corporation, Aurora, Ill.* •

Atlantic Coast Line harnesses diesels with OKONITE-OKOPRENE type DEL wiring

Mounting Okonite-Okoprene diesel wire in this wire harness subassembly saves labor for the Atlantic Coast Line. It eliminates the need for pulling individual wires through the diesel engine conduit system.

The Atlantic Coast Line Railroad, in keeping with its modernization program, selected a service-proved cable—Okonite-Okoprene type DEL—to harness its diesel locomotives. Service experience has proved that heat, moisture, mechanical abuse and oil—the main causes of damage to diesel circuits—have little or no effect on this cable's composite wall insulation and sheath.

Heat-resistant Okonite insulation, compounded with natural Up-River Fine Para rubber, provides time-tested mechanical toughness and electrical strength. The Okoprene sheath, a neoprene compound made to Okonite's own formula, is highly resistant to diesel lubricants and mechanical wear. Firmly bonded together by vulcanization in a metal mold, Okonite-Okoprene is the longest-lived diesel electric locomotive wire.

In addition to diesel wiring, Okonite-Okoprene is used on over 100 other Class 1 railroads for yard wiring, signal circuits and car wire. For complete information on Okonite railroad wires and cables, write for Bulletin RA1078 to The Okonite Company, Passaic, New Jersey.

OKONITE SINCE 1878 *insulated cables*

How to Be a Constructive Critic

Railroad leaders have rolled up a lot more praiseworthy accomplishment than they usually get credit for—from each other or from anybody else. The result is that, much of the time, railroad management is on the defensive—and not justly so. While there are a lot of things about railroading that need to be improved—the same is true of any other industry or occupation. There is certainly a great deal more in the past two decades of railroad leadership to justify honest pride of accomplishment, than to merit the degree of internal and external criticism to which railroad performance is often subjected.

It isn't how far an industry progresses in ten years that measures the capacity of its management—but, rather, the degree of progress it makes in reference to the conditions that surround it. A man can run a mile faster if he is unburdened than he can if he has to carry a 100-lb pack.

George Washington lost almost all of the battles he fought, except the last one. And he won the war. He showed himself a better general while losing battles than his opponents did while winning them. He did not give way to panic when conditions were adverse. If he was discouraged at times, he did not reveal such feelings to his soldiers. He continually marshaled his limited and diminishing resources with skill. And, most important of all, he never gave up. At length, his persistence survived adverse circumstances.

The analogy is an apt one for use in measuring the performance of railroad managements over the past couple of decades. In many situations they have had to retreat, but the conflict isn't over yet. Again, it should be remembered that it is a far easier task to build up a new business "from scratch" than it is to adapt an old one to entirely new surroundings. In the latter case, there are not only new things to be learned, but just as many old things to be unlearned. It is like the difference between building a new line of railroad in open country—and, years later, rebuilding the same line, under traffic, with the further handicap of restricted clearances from buildings hedging in too narrow a right-of-way.

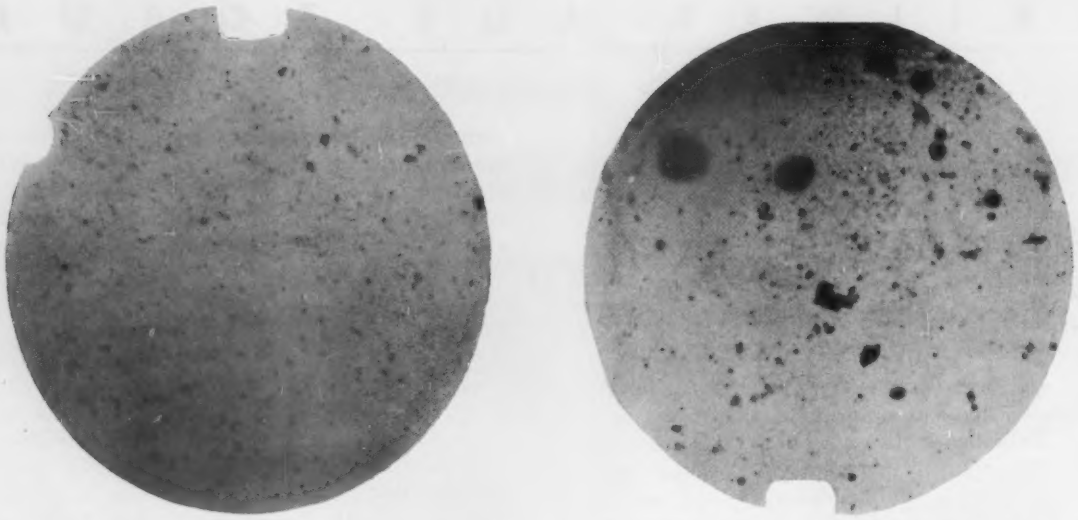
Honest and competent criticism is an audit or appraisal. No industry or other human undertaking can progress or even live without it. When criticism is absent, complacency creeps in, and the result of complacency is usually fatal. Conditions change all the time, and a business must change with them. Competent criticism, internal and external, is the principal device by which complacency is avoided.

But criticism is not inevitably constructive. It can get out of hand, and often does—tearing down while not building up. Where criticism is expressed in a way to serve as an incentive to greater and more skillful effort, its effect is healthful. But destructive criticism, instead of giving its object a friendly shove forward, impedes his progress. This kind of treatment can be expected from the antisocial elements in the country which are trying to put the railroads out of business and drive them into government ownership. It oughtn't to happen very often between one railroad man and another—each of them doing his honest and effective best to serve his employers and the public well.

The foregoing observations come perilously close to trespass into the area of preaching—which wasn't the writer's intention. The purpose, instead, was to draw attention to a valid dictum which has practical application in the field of public relations and which might be worded somewhat as follows:

Just as an honest man doesn't pretend to virtues he doesn't possess, he also ought to be equally alert not to tolerate quietly a reputation for faults which are not his. The performance of most railway leaders—while short of perfection—does not suffer in honest comparison with that of the leaders of other industries, when all pertinent factors are taken into account.

Practically all mature Americans believe themselves to have something like an expert's rating in discerning the shortcomings of the railroads. Railroad men seldom arrogate to themselves a parallel role in criticism of the leadership of other business. It is time they did so, wherever justified—to restore some balance to their own situation. There isn't any pleasure, or any justice or sense either, in being forever on the defensive. Railroad men should frankly claim credit wherever they know they merit it; and be less bashful than heretofore in calling constructive attention to the shortcomings of the leadership of other business. It is the socialistic policies pursued by the leaders of some other businesses which are the principal source of many of the troubles frequently and quite erroneously attributed to railroad managements.



ELECTRON MICROGRAPHS (X 6,750) of premium diesel fuels. Left: A low-sulphur straight-run fuel which has given satisfactory service for 10 years. Right: This fuel, with some particles over one micron, was unsatisfactory.

How to Use Lower Cost Fuels

D&RGW finds that particle size determines combustion characteristics of fuel oil—Dispersal and stability controlled by additives

The Denver & Rio Grande's studies of fuel, and fuel relationship to engine performance, confirm the belief that "fuel behavior has been poorly understood and that this is a fertile field for additional research," said Ray McBrian, that road's engineer of standards and research, at the annual meeting of the Railway Fuel and Traveling Engineers' Association in Chicago. Such research, he declared, offers "opportunities for saving by both the railroad and the refiner through cooperative studies."

Mr. McBrian told of the results which have been achieved by the Rio Grande in reducing fuel costs without any appreciable increase in maintenance costs. Total savings of $234,536 were effected during the first nine months of 1954, he said, with a mechanical operating ratio for the month of September 1954 of 14.89 as compared with 15.93 in September 1953.

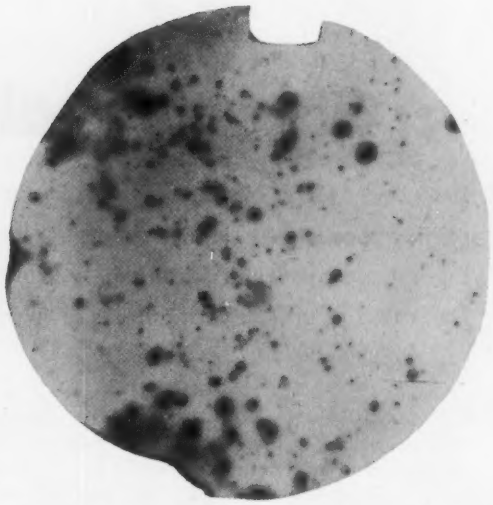
Mr. McBrian described some of the work done by the Rio Grande in cooperation with refiners. This has included studies of the effect of additive dispersants and chemical stabilizers on various unstable fuels. The attention of the laboratory, he said, was first directed toward the possibilities of fuel saving at the time when they were working with the U. S. Bureau of Mines' Rifle, Colo., oil shale plant. A typical analysis is shown in the table.

"The shale oil was dark in color," he said, "very unstable, and sludged badly, when exposed to light, in less than an hour. Because of studies we had made previously on lubricating oils with the electron microscope, it was decided that there was a possibility that fuels could be similarly studied. It was found that this fuel had a tremendous particle size when so examined. On a service test, in a very few hours, the fuel completely clogged filters and stuck injectors. Because of examination of satisfactory premium fuels using the electron microscope, in which it was found that the average particle size was less than 1/10 micron and which resulted in very low wear rates with no problems of filtration or injector sticking, it was decided that, if the shale-oil fuel could be similarly prepared or conditioned, no operational problems should be anticipated. Consequently, a test was conducted with an EMD switcher using two quarts of a dispersant per 1,000 gallons. Approximately 5,027 gallons of shale oil, high in sulphur, was used during the test. The service test ran for 715 hours.

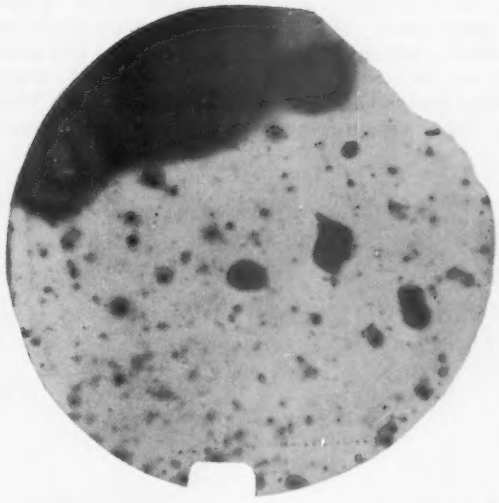
"The injector ran the full time with the interior bright and free from gum, the plunger working freely with no sign of corrosion. Carbon 1/32 in. thick on the nozzle tip was soft, easily removed and did not interfere with the spray pattern. The piston had no measurable carbon deposit; rings and valve stems were free of carbon.

TYPICAL ANALYSIS OF RIFLE, COLO., OIL-SHALE FUEL

A.P.I. gravity	35
Flash point, deg F	175
Pour point, deg F	15
Viscosity @ 100 deg F, Saybolt Universal	35.6
Condradson carbon, 10% bottoms, %	.50
Sulphur, %	.90
Nitrogen, %	.05
Cetane	45
Initial boiling point, deg F	454
50 per cent point, deg F	506
End point, deg F	665
Aniline point	126.7



A LUBRICATING oil (Left) removed from a locomotive after 30,000 miles, its dispersancy pattern destroyed. Right:

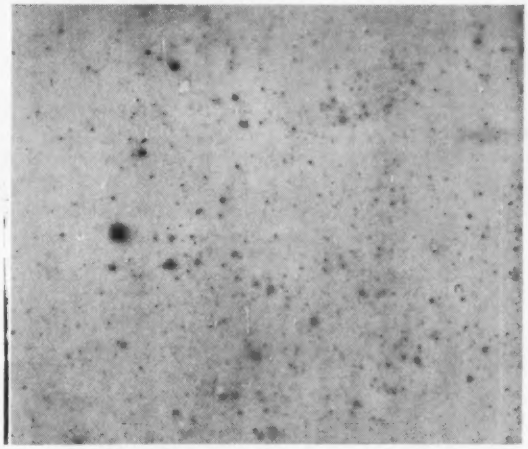


The fuel burned with this lubricant caused trouble. The pattern is characteristic of high-sulphur fuels.

"The Fulflo waste filters ran for the entire time. They were darker in color than normal but not plugged. In a test of shale oil without any treatment the same type of filter lasted only ten hours. One of two bronze sintered filters was removed for inspection after nine days service. About two-thirds of the area was spotted with a black oily deposit. It was not gummy or varnish-like and wiped off easily. The other filter was in service for the full test period. It was totally covered with a similar black deposit but had not failed in service. The deposit appears to be carbon with no evidence of gum. The burning of the oil appeared to be satisfactory regarding smoke and power. There was no trouble with sparking."

Mr. McBrian said that the procedure with the electron microscope is to examine the fuel as received from the refiner, place a sample in a bottle and expose it to light in a window for two weeks and then compare it with the sample as received. If the fuel has developed agglomerates and large particles, and chain-forming constituents are present, it is considered to be unstable and will develop trouble in service. Fuels are then treated with dispersants and reexamined.

The so-called economy type fuels, he said, may include fuels with high pour point, low-cetane fuels, high-sulphur fuels, mixtures of residual fuels with blends of either catalytically cracked or straight run, and mixtures of cracked with straight-run fuels. These can result in instability.



DISPERSANCY pattern of a lubricating oil removed from an engine burning a satisfactorily dispersed fuel with a calcium-base additive after 100,000 miles. Make-up oil added; no oil change.

Where pour point is a problem, Mr. McBrian remarked, fuel heating facilities must be installed on the locomotive and in the storage tanks. Another approach is to add a pour-point depressant plus a dispersant to prevent a macro wax crystalline formation in tanks and pipe lines.

It is possible, he said, to secure a high-paraffin fuel with a pour point of 60 to 65, which can be changed by mixing with a zero pour-point fuel to produce a plus 10 pour point and a cetane of plus 50. But it will have a plus 20 or 25 cloud point. In cold territories in some switchers, the cooling water temperatures of which remain less than 100 deg F, a white fog of finely dispersed paraffin mist will appear in the exhaust. The high cetane

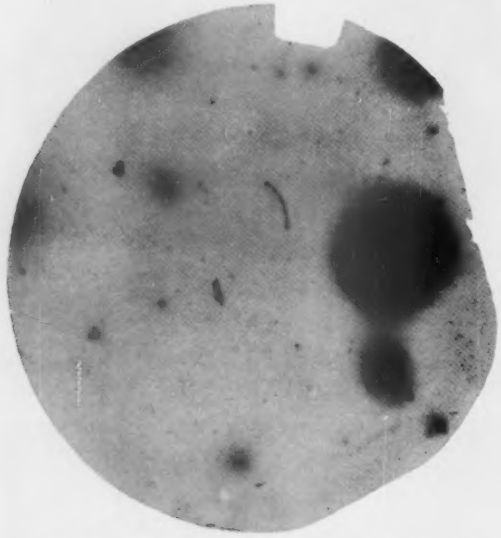
WHAT MAKES A FUEL FIT?

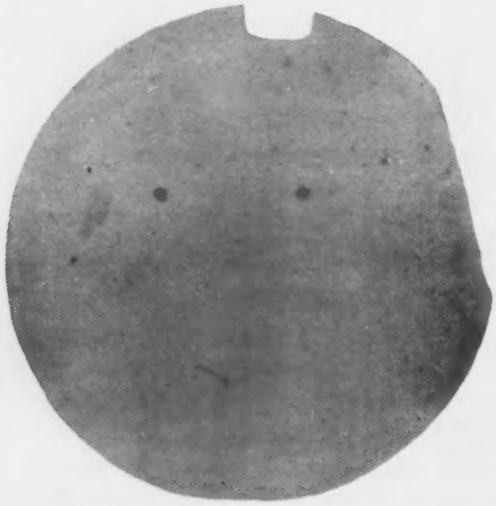
The following theory with respect to the performance of fuels was formulated by the D&RGW by correlation of service and laboratory results:

- **To have a proper and even combustion without excessive ring wear, deposits and liner wear, and to prevent contamination of lubricating oil with depletion of additives, there should be no particles of an average of 1/10 to 1/4 micron in a diesel fuel.**
- **There must be no chain formation present, which is evidence of instability, nor should gum forming constituents appear.**
- **Fuel must not deteriorate in storage and must be compatible when mixed with other fuels.**
- **If the particles and unstable chains can be dispersed and stabilized by additives, they must remain well dispersed during the storage time.**

value is not enough to insure ignition at the low operating temperature. The temperature must be raised or an additive which will satisfactorily ignite the fuel used.

It may be necessary to change rack settings to avoid burning heads when using high-Btu economy fuels. They also usually make it necessary to change Clarkson steam-





MICROGRAPHS (X 6,750) of a premium fuel: sulphur, 0.29%; API gravity, 37.6; cetane, 57. Above: After exposure to light for two weeks. Below: After addition of dispersant materials. The latter reduced wear in laboratory engine tests by 50%.

generator burner settings to avoid excessive deposits. If the fuel is properly conditioned with a dispersant, Mr. McBrian said, storage and filtration problems should be satisfactorily overcome. If not properly conditioned, metallic filter elements may react to cause instability.

Fuels of improper particle size cause lubricating oils to lose their dispersancy patterns and their detergency, resulting in wear conditions. Lubricating oils with higher additive levels may improve such conditions temporarily but will not result in satisfactory operation. The smoke levels in general will be higher with the lower cost fuels than with the specification fuels.

Gates Installed

Increased safety for street traffic accomplished through entire city limits by closing some streets and installing improved protection at others, with automatic speed-selection controls

The Chicago & North Western, in cooperation with city and state authorities, has carried to completion a program of improved protection and safety at all street crossings over its double-track main line through Morrison, Ill., 124 miles west of Chicago on the route westward to Omaha.

Morrison grew up on both sides of the C&NW tracks. The business district is on a street which is parallel with and about two blocks north of the tracks. About a third of the residences and a few small industries are south of the tracks. As the city developed, nine streets were extended across the railroad.

Flashing-Light Signals in Use

In 1929, automatic flashing-light signals were installed at each of the crossings with manual supervision from two separate points. Since the installation of this protection, the number of trains has decreased, due in part to discontinuance of some local passenger trains and to the increased tonnage per freight train. Meanwhile, as the city of Morrison expanded, the pedestrian and vehicular traffic increased.

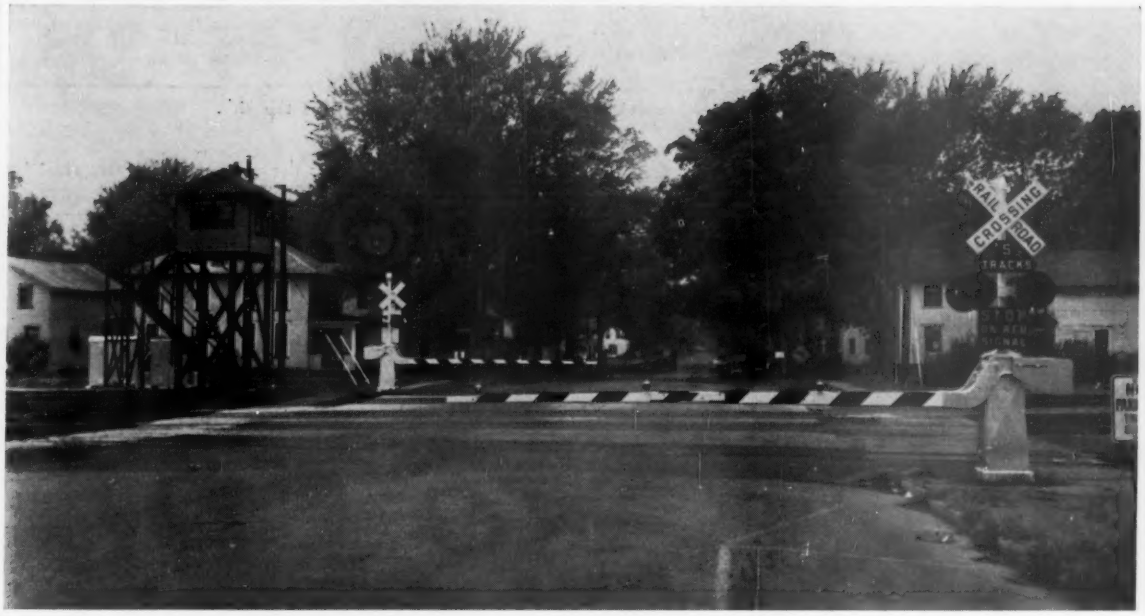
With the growth in auto traffic and its usual quota of careless or indifferent drivers, it appeared desirable to provide improved protection at the more heavily traveled crossings, and to close the less important ones. After several conferences, the city, the state and the railroad decided upon installation of flashing-light signals with short-arm traffic gates at five crossings, and placing of barricades at the remaining four crossings. Representatives of the city and the railroad made extensive studies of pedestrian and vehicular traffic at each of the nine crossings, careful consideration being given to the location of fire stations, schools, churches, industries and stores.

Among the crossings protected that at Cherry street, which crosses the tracks at the east end of the passenger station platform, carries much of the local pedestrian and vehicle traffic, and is also a state highway. Genesee street, at the west end of the passenger station platform, carries much pedestrian and vehicular traffic between the business section on the north side and the residences on the south side of the tracks.

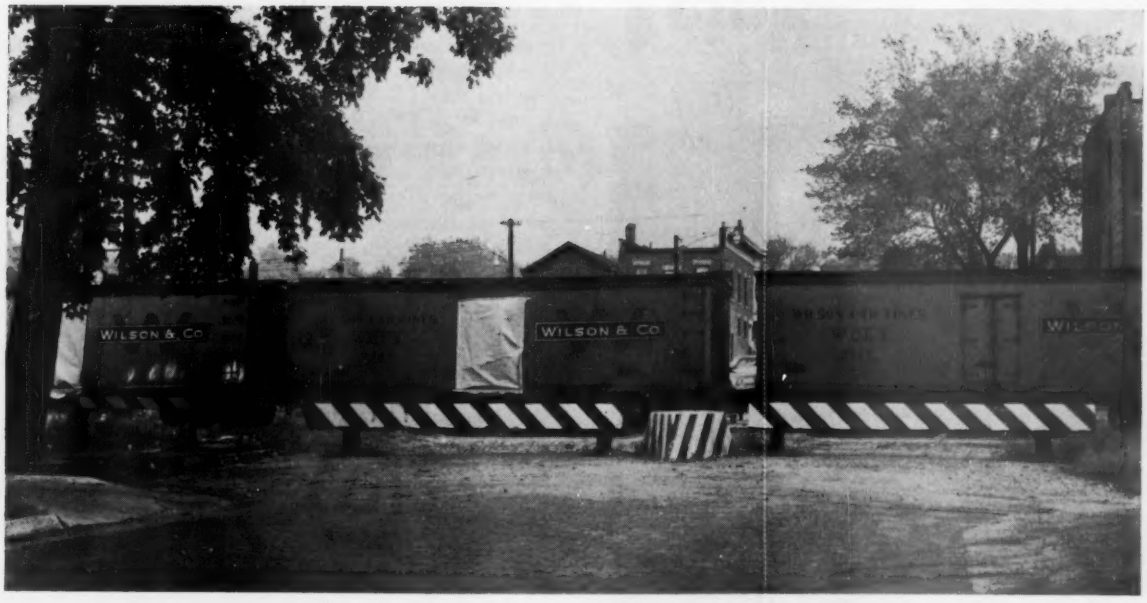
Being a state highway, the state of Illinois shared in the cost of the installation at Cherry street; the city also contributed to the project, and the balance of the cost was borne by the Chicago & North Western.

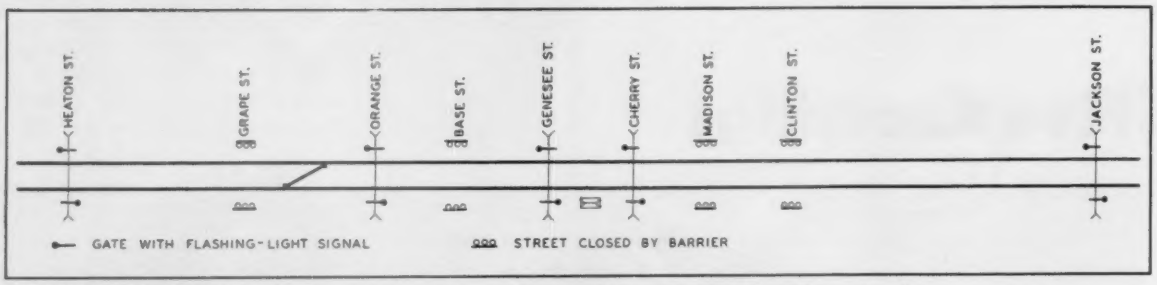
Each of the five crossings is now protected by flash-

at Five Crossings



. . . and Barriers at Four





MODERN PROTECTION of the same type is now in service at all the crossings throughout the city.

ing-light signals with short-arm gates, which, when lowered, extend across the right half of the pavement approaching the tracks. This leaves the other half of the roadway unobstructed to permit vehicles to depart from the crossing. The gates are on the same mast with the flashing-light signals, and a warning bell is attached to one of the signals at each crossing. The protection is automatically operated on the approach of trains by track circuits.

When a train enters an approach section, the bell, the flashing-light signals and the lamps on the gate arms are operated for a prewarning period of 5 sec, after which the gates operate, reaching the lowered position in about 8 sec. The gates are electrically driven down 44 deg, and lowered by gravity the rest of the way. The circuits are designed so that gates are down at least 10 sec before the arrival of a train at the crossing. When the rear of a train clears the crossing, the gates start to rise and will reach the fully raised position in approximately 6 sec.

Speed Selection Controls

Train movements through this city consist of 10 regularly scheduled daily passenger trains, 10 freights, 1 local freight daily except Sunday, and about 6 extra freights daily. The passenger trains which do not stop at Morrison operate at speeds ranging up to 90 mph, and the freights up to 60 mph. If the controls had been laid out for only the maximum speed, the slower trains would cause the gates to be down a longer time than desirable, thus delaying street traffic. To reduce such delays to a minimum, selective approach speed control

(Continued on page 55)

"Porky" Takes NYC's Measure

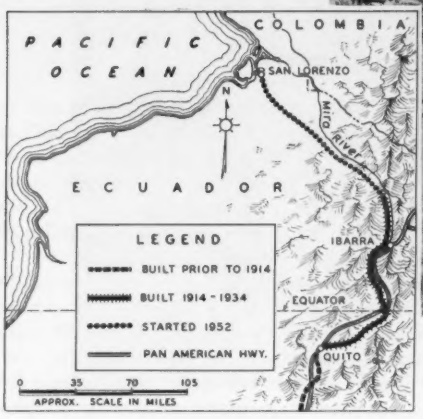
Concurrent with the greatly increased dimensions of shipments offered to railroads during the last few years, the New York Central has designed an improved clearance car so its Clearance Bureau will have accurate data to enable it to accept and route over-size shipments over the system. This improved clearance car was built at the Central's Beech Grove shop.

"Porky," so nicknamed because its 120 wooden feelers resemble a porcupine's quills, is self-propelled by a 250-hp diesel engine. These feelers record any obstruction less than 7-ft 8-in. from the center line of the track, from 4 in. to 22 ft above the top of the rail. As the car is slowly driven under a bridge, through a tunnel or past a structure adjoining the track the feelers are pushed back so the minimum outline of the structure is reproduced on the feelers. Each feeler is then touched with a large pantograph, to which a small pantograph is attached. This small pantograph reproduces the minimum outline on a chart to a scale of 1-in. to 1-ft. The upper quadrant of the recording plate can be raised electrically so that even high structures can be accurately measured.

An ingenious method has been used on this car to block out spring action and lateral motion so that, regardless of superelevation, the vertical centerline of the car is always at a right angle to the plane of rails.

All recordings are consolidated, by divisions, in the offices of the Clearance Bureau and these consolidated charts are then used to obtain the accurate routing of oversize shipments.

INCREASED REVENUES, largely from the sale of bananas, enabled Ecuador to finance completion of railroad between Quito, the capital, and the seaport of San Lorenzo.



RAILS IMPORTED from Belgium and ties cut from Ecuador's tough Guayacan Chanue trees are being used to build the new railroad. Thirty-two-foot rails, weighing 600 lb, are handled by crews of four men each.

GRANITE, quarried locally, was used in building substructures of bridges. Conditions prevented use of heavy construction equipment, but note portable compressor and concrete mixer.

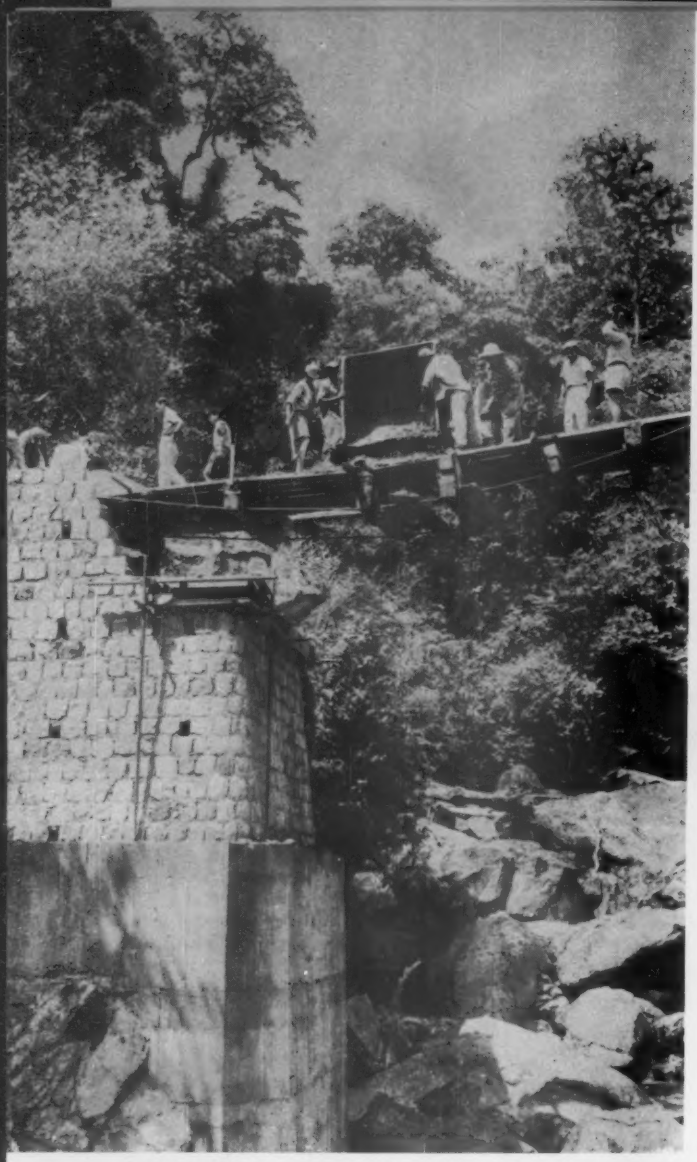
Ecuador Builds 94-Mile Railway

Line being extended through mountains and jungles to link capital with port on the country's northwestern coast

After 41 years a railroad-builder's dream is about to become a reality in Ecuador. The dream had its beginnings in 1914 when a project was started to extend the Ecuador railroad system to the seaport of San Lorenzo, on the country's northwestern coast. Such a project was termed "impossible" and "impractical" because it involved crossing the snow-capped Andes mountains and dense jungles. But mingled with these barriers were rich agricultural lands which made the building of this railroad a "must" in the development of Ecuador's overall economic structure.

Rail System Was Limited

For many years a number of short-haul railroads have been operating mostly in the coastal regions of Ecuador and only one line connected the temporate Andean regions with the coast. This was a 288-mile narrow-gage railroad between Quito and Guayaquil, the nation's



MANUAL METHODS are largely used in the construction of bridges. Note that stone pier has concrete footing.

MANY TUNNELS had to be constructed to provide protection against landslides which are caused by sudden torrential rains. Here men are shown clearing the tailings from one of the tunnels along the Mira river.

largest seaport. Over this road practically all of the country's imports and exports were carried.

The new railroad is actually a northerly extension of the Guayaquil-Quito line. Also narrow gage, it will give Quito and all northern Ecuador a shorter freight haul to and from the coast and give Quito a seaport 350 miles closer to the Panama canal than Guayaquil. San Lorenzo is reported to be one of the best natural harbors on the Pacific Coast of South America. The lands adjacent to the new road are adapted to such crops as cocoa, coffee, bananas, balsa wood, cattle and (in the higher altitudes) fruit, grain and dairy products. Ecuador is the world's largest producer of bananas.

Work Is Near Completion

The railroad between Quito and San Lorenzo will be 232 miles long. The route follows the Pan American highway north to Ibarra, 100 miles from Quito and at an elevation of 8,000 ft in the Andes. It then cuts northwest through the mountains to San Lorenzo. The line will follow the Mira river for more than half its length between Ibarra and San Lorenzo.

In 1914 work was started on the construction of the line northward from Quito. Work proceeded slowly and by 1934 the railhead had been extended only 38 miles beyond Ibarra. Construction was then suspended until after World War II when increased revenues, largely due to greater banana exports, permitted work to be resumed. In 1952 a contract for completion of the line was awarded to two French firms.

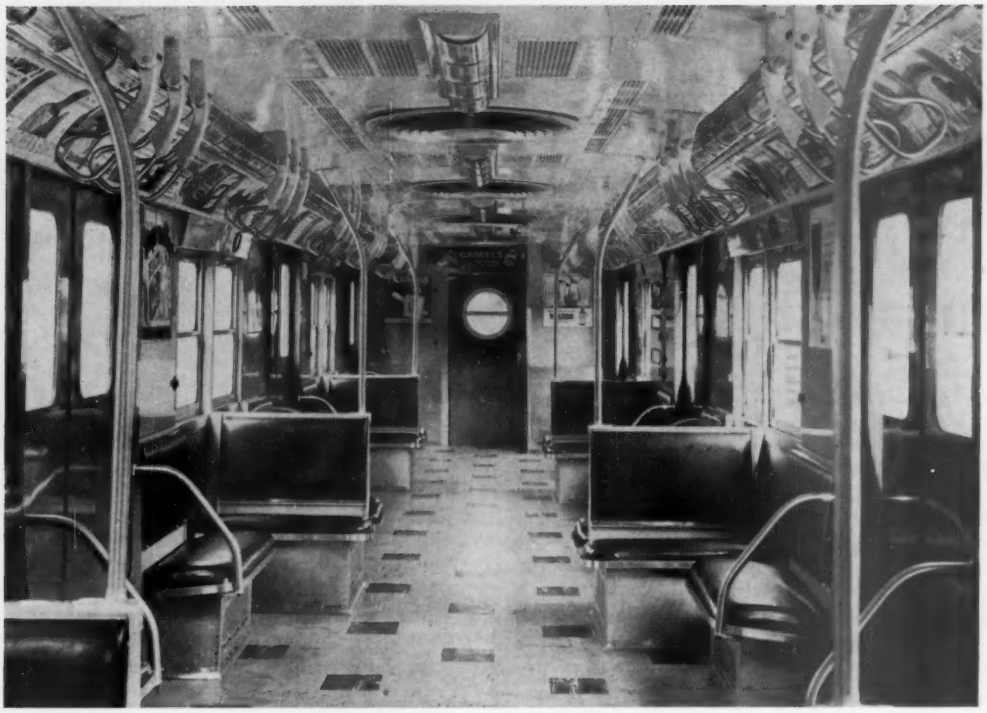
The work then progressed at a relatively rapid rate on the remaining 94 miles to the coast. At times, the contractors had as many as 3,000 men on the job. Much excavation, filling and grading was done by manual labor, as mountain and jungle conditions made it impossible to bring in bulldozers and other heavy equipment. In spite of this handicap the next three years saw the construction of 11 bridges, 10 tunnels and 54 miles of track. Strong, high bridges, with footings of locally quarried granite, and many tunnel borings, were imperative as protection against torrential seasonal rains and melting Andean snows which have a habit of swelling seemingly innocent rivers to flood stage almost overnight.

Steel rails for the new road, imported from Belgium, are 32 ft long and weigh 600 lb each. Thus they are approximately equivalent to 56-lb rail. The rail was laid by hand, with individual rails being handled by crews of four men each. The ties were hewn from Ecuador's tough Chanue trees. At present the roadbed is nearly finished and less than 40 miles of track remain to be laid between Ibarra and San Lorenzo.

Harbor Improvements Planned

Studies have been completed for the transformation of San Lorenzo into a first-class deepwater port. A 375-ft pier, improved cargo handling facilities, a lighthouse, and the dredging of the bay to permit entry of the largest vessels, are planned.

An estimated $20,000,000 will be spent for the 94 miles of new railroad, port improvements, maintenance facilities and rolling stock. It is expected that the new line will be placed in operation next year.



STAINLESS STEEL and aluminum for interior finish are specified to reduce maintenance.

What's New in Rapid Transit Cars

Reasons for the trends in equipment design exemplified by new cars for the New York City Transit Authority

Sixteen hundred new subway cars will have been placed in service in New York in the 10-year period between 1947 and 1957. Transit authorities in Paris, London, Stockholm, Toronto, Cleveland, Boston, Chicago and Oslo have also been buying or planning to buy new rolling stock.

There has as yet been no standardization of rapid transit cars such as occurred when the PCC trolley car was developed in the mid-1930's. Each operating agency has its own ideas of what it needs to meet its passenger requirements. Some operators design cars with narrow aisles and limited standing area, features which other operators cannot tolerate because of the large volume of traffic in the rush hours.

The influences of circumstances on design with special reference to New York subway cars were outlined in a paper by Reginald G. Welch, division engineer, cars and shops, of the New York City Transit Authority, which he presented at a meeting of the Eastern Car Foremen's Association in New York last month.

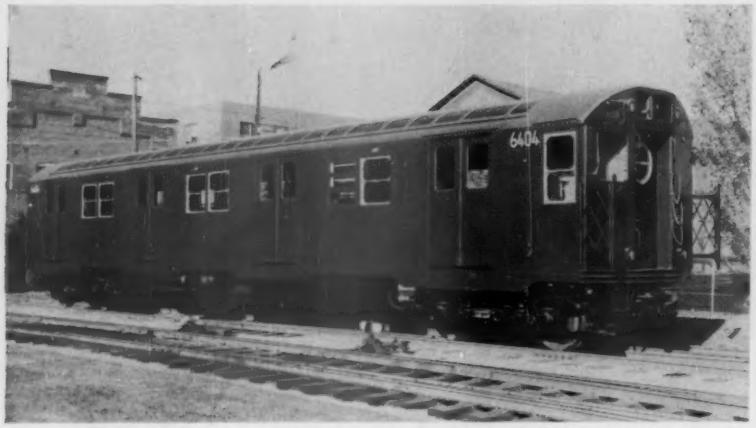
Among trends of design being followed by most operators, he said, are use of corrosive-resistant high strength steels for the car structure and light alloys for interior finish and hardware. Antifriction bearings are becoming almost universal. In New York all cars purchased since 1947 have dynamic braking. Operators in other cities have lately adopted dynamic braking. Fluorescent lighting and better ventilation are considered desirable by most operators.

The reasons for these trends in design, in addition to securing a vehicle the public likes, are (1) to produce a car that can run for longer intervals between routine inspections, (2) a reduction in replacement of parts when overhaul is required, and (3) simplification of maintenance procedures. With these objectives obtained to a considerable degree, it is economical to have a higher purchase price because lower maintenance costs through the years can be anticipated.

No radically new design has been offered in the rapid transit vehicle field comparable to the development of lightweight, low center of gravity, cars being offered to the railroads. A similar departure for subway car design has been discussed. Whether it will get beyond the thinking stage remains to be seen, Mr. Welch observed.

The latest subway cars, he said, use all proved materials and devices to provide for long life and reduction of maintenance costs. Simplification of design has been stressed as well as use of new materials.

Changes most evident to the riding public are in interior finish and equipment. In cars purchased recently,



LESS ATTENTION is given to exterior finish, since car service is underground.

MOTORMAN'S control position.

rigidized stainless steel is used below the windows. This is polished and no paint is used, so repainting will never be required. Doors and interior panels above the window sills are of aluminum finished with a high grade of enamel. Use of stainless steel for doors and interior panels above the window sills was considered but abandoned because of weight and assembly difficulties. The ceiling sheets are of porcelainized aluminum with hinged perforated grills of aluminum, finished with baked enamel.

THE AMOUNT OF UNDERFRAME equipment has increased with the adoption of dynamic braking, but better switch gear makes maintenance work less than for many older, simpler controls.

TRUCKS have cast steel frames with transom-hung motors and flexible couplings between the motors and gear reduction units.

Fluorescent light fixtures are of extruded aluminum with short sections of molded glass designed to give even light distribution. Light levels at the reading plane are in excess of 20 footcandles.

The use of Magnesite flooring has been abandoned in favor of asbestos Vinyl tiles installed over aluminum truss plate and light flexible underlayment. The mottled gray overall pattern is relieved by use of a few mottled black tiles.

The new seats have aroused considerable attention. However, the simplicity of their design is not readily apparent. The red, fire resistant, fabric-supported, Vinyl covering is noteworthy, Mr. Welch declared, as well as the fire resistant cushion material. A cushion is now assembled of some 15 to 20 pieces instead of 250 to 400 previously used. While the foam cushion is at present somewhat more expensive than older materials, the covering material costs less. Repair and assembly are a matter of minutes instead of hours, so the overall costs for maintenance will be less.

The new ventilation installation uses large capacity fans to bring in outside air and recirculate interior air. Fans and heaters are automatically controlled to provide maximum comfort in all weather. Experiments are being made with air conditioning. Whether it will be installed, Mr. Welch said, will depend upon test results and cost figures now being studied.

The most apparent changes under a New York subway car are the package control units, with simplification of wiring and location of components to facilitate maintenance work. The amount of equipment has increased with the adoption of dynamic braking, but better switch gear and new relay and contact designs have kept pace with the times, so that maintenance work is less than for many older, simpler controls. Two types of control have been employed on the new cars. These are the pneumatic switch control of Westinghouse Electric Corporation, and the electric motor-operated cam control of General Electric. The latter employs a blower mounted on the m-g shaft for forced ventilation of the resistors which are enclosed.

Both types of control provide dynamic braking from top speed down to 10 mph. At that speed, the electropneumatic brakes provide the final braking of the car. This braking system provides a smooth stop with complete control at all times including emergency features

and assurance of air brakes in the event of a dynamic failure. The end result of the braking system has been great reduction in brake shoe and wheel wear, Mr. Welch explained.

The accelerating and braking rates are held constant under varying load conditions by means of empty and load controls. The accelerating rate of all new cars is 2.5 mph per sec. Service braking is at the rate of 3 mph per sec, and emergency braking at 4 mph per sec. To realize full advantage of these higher accelerating and braking rates, a group of new cars is assigned to one line. Fewer cars are required because round-trip running time is reduced.

The cast steel truck frame with transom-hung motors and flexible couplings between motors and gear reduction units is used on the new cars. All truck springs are coil type and riding smoothness is increased by use of rubber pads and vertical and lateral shock absorbers. The motor leads can be connected or disconnected in seconds. The gear reduction unit is totally enclosed, eliminating loss of gear lubricant. The motors are equipped with roller bearings as well as the journals. Third rail shoe beams are now laminated and the shoe fuse box is of molded Bakelite. Cabs are equipped with a microphone for a public address system, operating through eight loudspeakers under the seats.

There are two schools of thought concerning the weight of rapid transit cars, Mr. Welch went on to say. Some designers believe a small light car with lighter equipment is the answer. Operators faced with extremely heavy loads in peak hours, such as in New York, believe large cars are the answer. There is some overlapping of the two designs. Some of the equipment used for heavy cars is also used on smaller, lighter cars. Some designers believe articulation with some form of semi-permanent intermediate couplings is the right approach to weight reduction. Such construction reduces cab equipment and some auxiliaries with a resultant reduction in weight, but some of the operating features are not considered desirable by operating men.

The weight of new subway car underframes and shells has been much reduced over older cars through use of new high strength steels and new designs. The total weight of a complete car has not been reduced in the same proportion because dynamic braking, better ventilation and fluorescent lighting have added weight partially offsetting savings in the body structure.

The new lightweight railroad coaches weight 750 to 800 lb per seat, as compared to over 2,000 lb per seat for old-style equipment. On a railroad, weight per seat means weight per passenger. On the new subway cars, with only a seated load, the weight per passenger averages approximately 1,600 lb. With a rush hour load, the weight per passenger averages approximately 400 lb. With a 50 per cent standing load, the weight per passenger averages approximately 600 lb.

Further weight savings on the present subway car design is a matter of reducing the weight of each component by a few pounds, Mr. Welch pointed out. He urged suppliers to consider all possible methods of weight reduction, including use of light alloys. However, maintenance costs have to be considered, too, he warned. A certain amount of ruggedness is desirable in subway equipment and some components are already as light as they can be with safety.

Benchmarks and Yardsticks

EVERY MAN WITH ANY CURIOSITY in him wants to know something about the significance of his work, and not just how to do it. It is only by having some idea of his work's purpose —where it fits into the larger picture of his industry as a whole, and where his industry fits into national life—that a man is equipped to make the changes and adjustments in attitude that external changes may require. The man who is properly curious will want to know what institutions around him (schools, industry, the press) are doing a good job, or a poor one—and why what they're doing is good or bad. He'll often wonder whether his country, or civilization as a whole, are going forward or backward—and in what respects.

Such questions bedevil many conscientious and wide-awake people—and, in the millions of words spoken and written each year in alleged answer to these questions, there is more confusion than guidance. But some true guides there are, and—in your reporter's fallible opinion—just about the ablest instructor in this area to appear in the present century is a Spaniard named José Ortega y Gasset. A little book of his entitled "Revolt of the Masses" was first published about 25 years ago; and it keeps on informing and inspiring people.

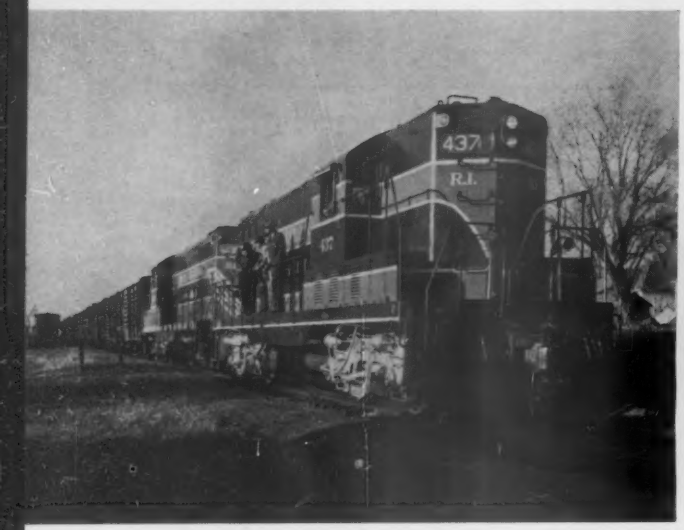
Sr. Ortega died a few weeks ago, in his seventies. Because of political instability in his native land he spent a large part of his life in exile—in other European countries and in South America, with some visits to the U.S.A. He was no provincial or cloistered philosopher—but a widely traveled and penetrating observer. He was deeply learned in history, which he used as a yardstick to measure contemporary events.

What the "Revolt" book is, more than anything else, is an interesting and moving appeal, to people of understanding, showing them how to avoid mass-produced opinions and prejudices, and to base their observation, thought and behavior on some original thinking and genuine values.

No other writer has made more explicit and understandable the fact that the direction of most nations is being assumed by people who are avid to acquire, without feeling any corresponding obligation to produce or to excel. These "mass men" are not necessarily the men at the bottom of the economic scale—and the exceptional men are not necessarily those in the higher economic brackets. It is the exceptional men who have given us our improved economic standards, bringing enormously increased population, mostly of "mass" men—who now threaten to destroy the whole structure.

Those who are bewildered at the irrational nature of the opposition to the "Weeks report" will find some likely answers in Ortega's observations.

J.G.L.



OUT of Audubon, Iowa, at sundown. . . .

INTO Chicago at dawn. The "T-Bone Special" builds. . . .

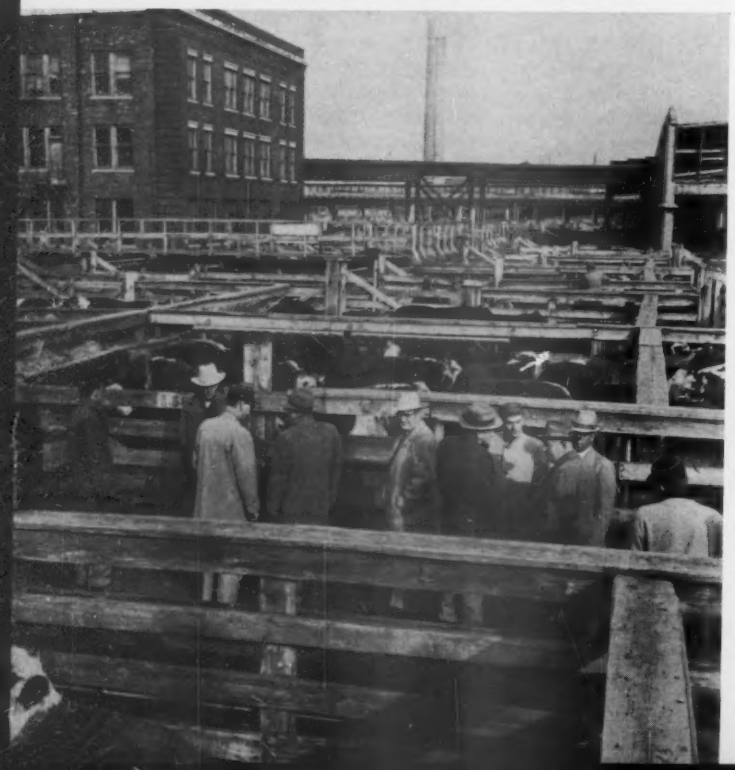
Goodwill on a Branch Line

An annual cattle-movement off the Rock Island's Audubon branch spotlights the railroad as community partner

Every fall for four years the Rock Island has joined with a small town in western Iowa in a project that not only is profitable for the railroad but offers, as a bonus, some excellent returns on community goodwill.

The occasion is the annual "T-Bone Special," a train-load movement of top-grade cattle from this town into the Chicago market. The railroad joins in community-wide promotion of the movement—an operation which this November totaled 52 carloads and five Pullman cars. Local businessmen and cattlemen ride into Chicago on the same train with the livestock.

440 MILES IN 12 HOURS. Extra attention and priority service to the town's "money crop" helps the Rock Island better its relations with a branch-line terminal.



Audubon, Iowa, where the project originates, is located at the end of a 30-mile branch out of Atlantic. It's a 465-mile run from Audubon to Chicago.

Promotion of the annual "T-Bone" is handled locally, with newspaper advertisements, stories and other publicity. These efforts are coordinated through the local bank. The Rock Island, meanwhile, uses only system cars to protect the movement and begins accumulating, cleaning and upgrading them several days in advance.

From a community standpoint, "Operation T-Bone" helps focus attention on Audubon as a livestock shipping point. Recognizing the value of the project, both for community and the railroad, a sizable number of Rock Island officers converge on the town to take part in the operation. This year's contingent included R. H. Anderson, superintendent of transportation; J. C. Cartland, division superintendent; and W. M. Sargent, general livestock agent.

Loading at Audubon for the "T-Bone" is an all-day job, beginning around 10 a.m. and finishing by 4 p.m. The road-switcher that normally handles the branch-line service is supplemented with a second unit, and the loaded cars move to the main line at Atlantic. There the Pullman cars and road units are coupled on, and the train begins its priority run to Chicago. The 1955 "T-Bone Special," with its 90 passengers and $300,000 of prime cattle, was spotted in the Chicago stockyards before 8 a.m. the following morning.

these men can be on your staff . . .

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3 Reasons why...

G.E.'s traction system gives you maximum locomotive performance

1—HIGHER CONTINUOUS TRACTIVE EFFORT

In day-to-day operations, locomotives equipped with G-E traction motors consistently prove their capacity for carrying heavier loads. That's because the GE-752 motor has 15 percent higher continuous tractive effort, at comparable gearings, than any other motor in railroad use. This extra capacity accounts in large measure for its record of low maintenance costs and low percentage of failures—two important factors in lowering operating costs.

2—FEWER LOCOMOTIVE ROAD FAILURES

Although flashovers occur on all locomotives, road failures due to generator flashover are practically unknown on locomotives equipped with G-E traction generators. In actual tests, one G-E generator took over 400 flashovers without failure. Features that assure low flashover damage include: inherently high machine stability; mycalex brush-holder insulators which unlike the porcelain insulators in other generators will not shatter during flashover; and, a brush-holder shield that drastically reduces damage to the brush rigging.

3—MINIMUM MAINTENANCE REQUIREMENTS

One of the chief benefits that any locomotive control system can provide is reliability. It is important to reduce or eliminate those small, continuing and aggravating maintenance problems that occur on some control systems. In actual tests, G-E control has operated hundreds of thousands of miles in heavy mainline service with complete reliability.

Ask your G-E Apparatus Sales representative for more information about the General Electric traction system—the system that sets the industry standard. Or write Section 115-8A, Locomotive and Car Equipment Department, Erie, Pa.

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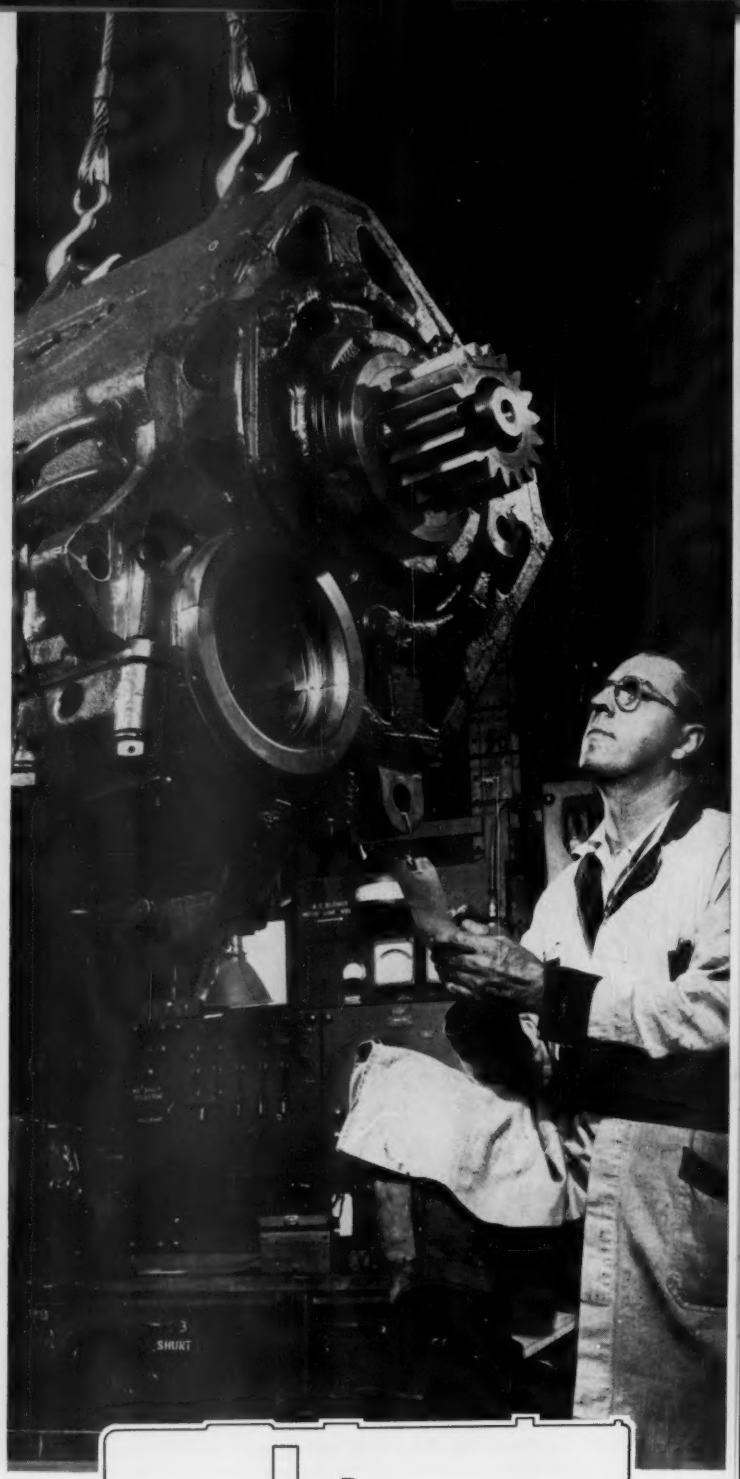
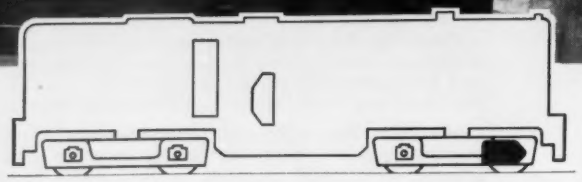
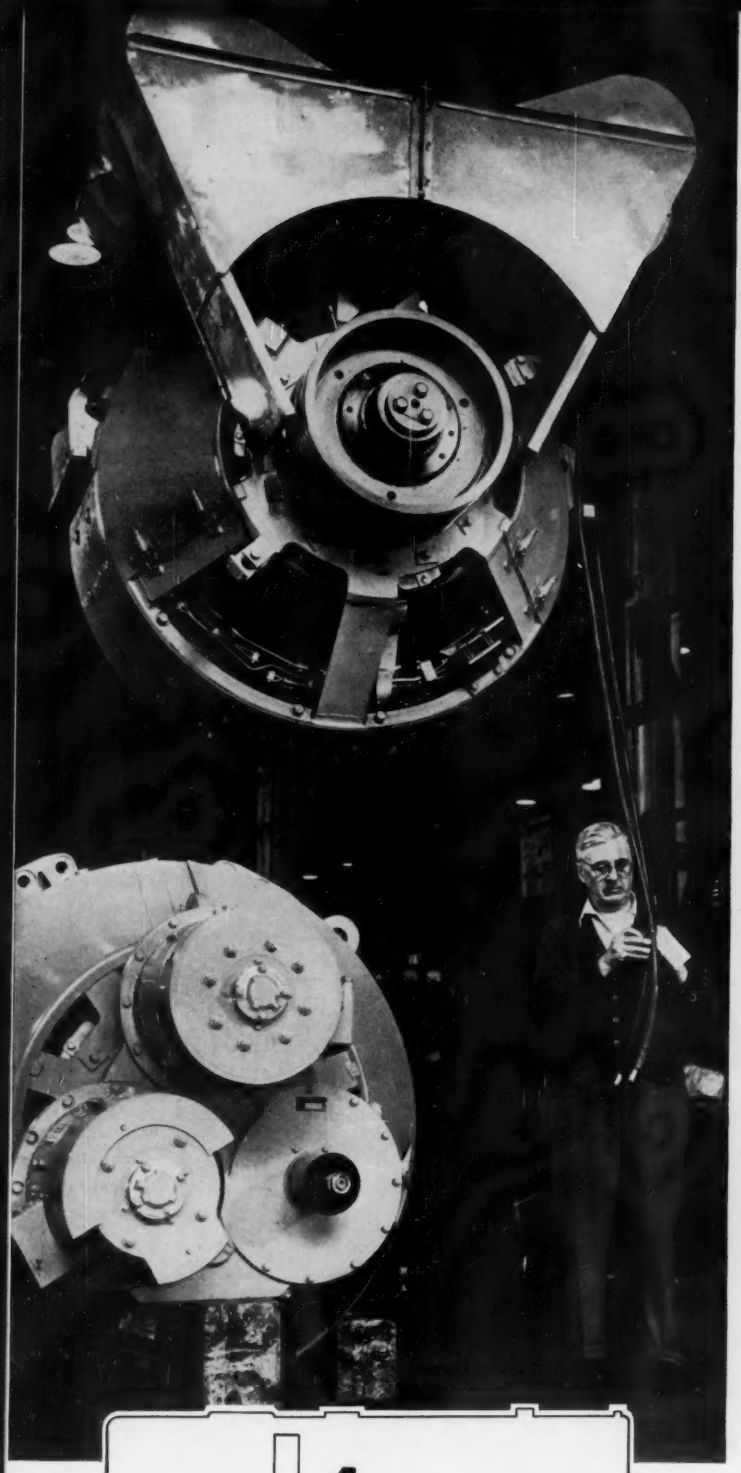


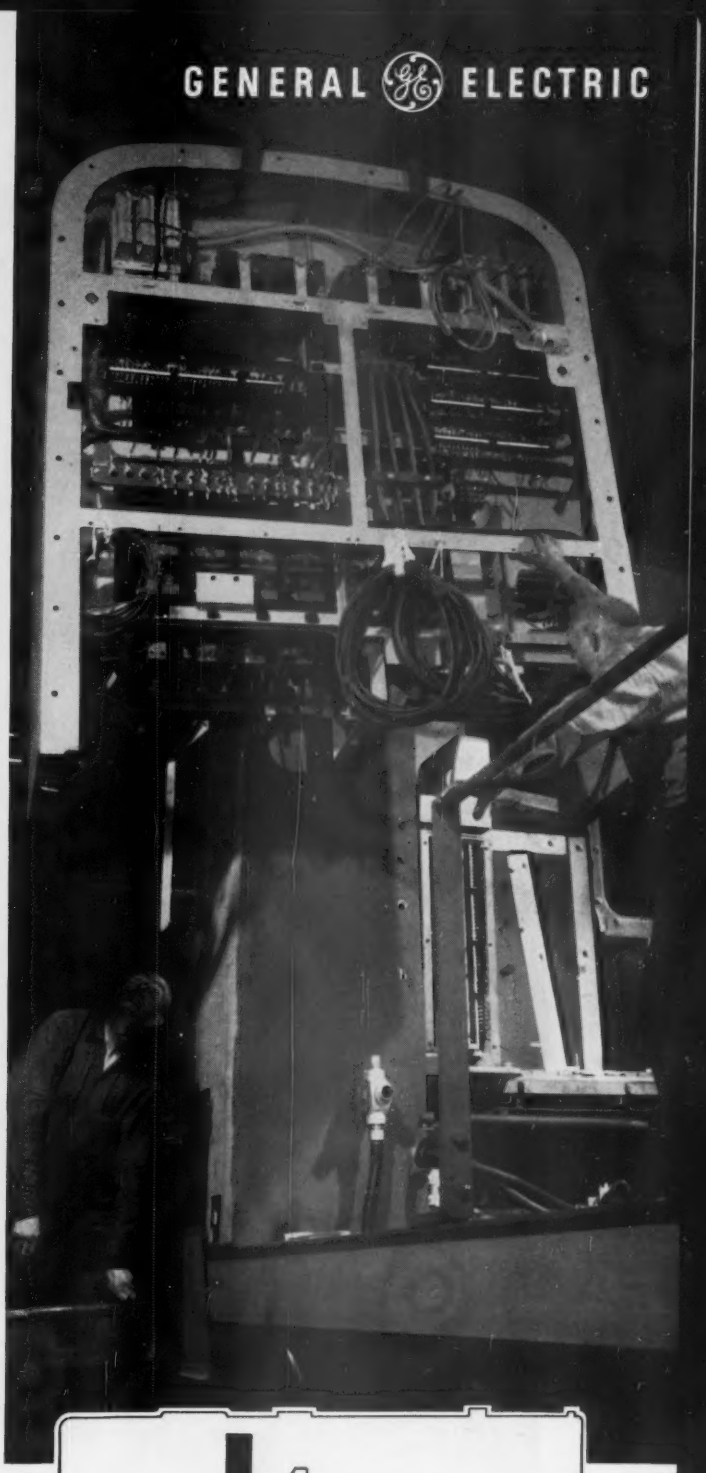


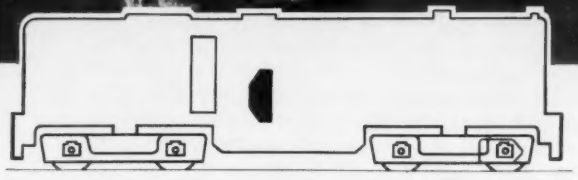
1 G-E TRACTION MOTORS GIVE YOU 15% HIGHER CONTINUOUS TRACTIVE EFFORT

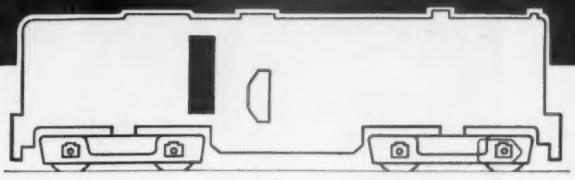
More working material in the GE-752 motor (12 percent heavier than any other motor offered for standard application) means higher ratings. The effective use of additional active copper and iron results in the most powerful traction motor available today.

GENERAL ELECTRIC









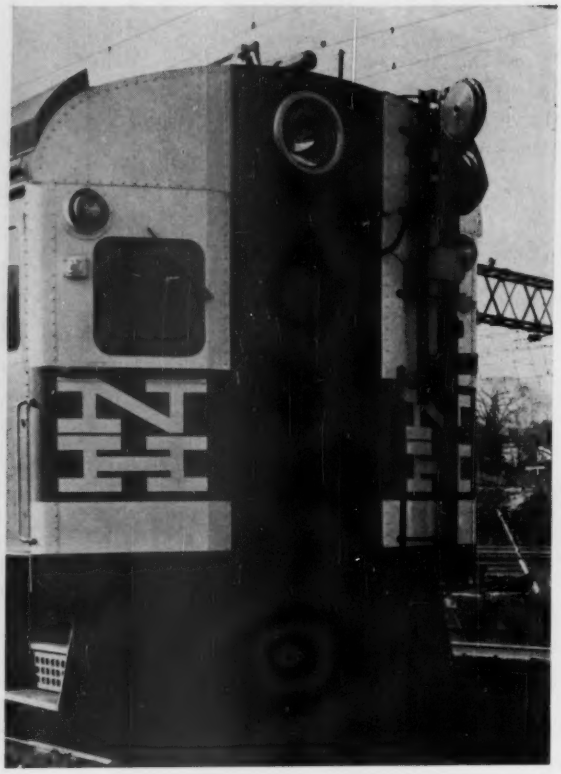
2 G-E TRACTION GENERATORS ARE BUILT TO REDUCE LOCOMOTIVE ROAD FAILURES

Because they are designed specifically to take flashovers in stride, G-E traction generators help protect your locomotive from frequent and costly road failures. In most cases, if a G-E generator flashes over, it simply recovers and the locomotive continues its run.

3 G-E CONTROL REQUIRES MINIMUM MAINTENANCE BETWEEN ANNUAL INSPECTIONS

G-E control is simple in construction, with fewer moving parts than other systems. In actual railroad service, locomotives equipped with G-E control have operated from annual inspection to annual inspection without a single detention being charged to the control system.

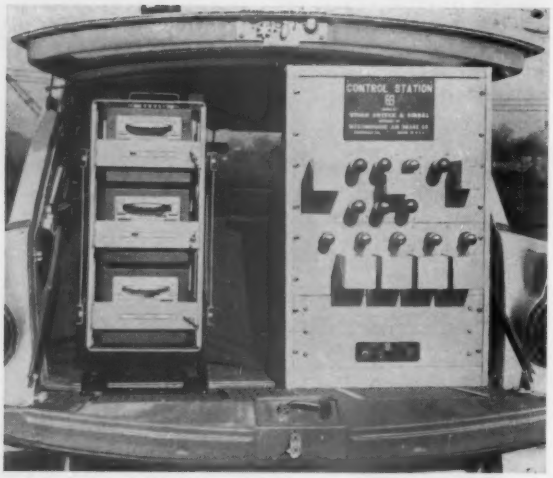
▲ P. B. McGINNIS, president, New Haven, expresses his wishes on the movement of the train, and George Baughman, vice-president, Westinghouse Air Brake Company, translates them into car movements by means of the control panel on Larchmont, N. Y., station platform.



MOUNTED ON the outside and head end of the car are two receiving coils. They pick up the inductive carrier signal, one receiving the signal from the trackside telephone and the other the signal for control of the car from the equipment mounted in the station wagon. ▶

Train Runs by Remote Control

With no one in the operator's cab, m-u car loaded with observers starts and stops and runs in both directions, and responds to train signal system



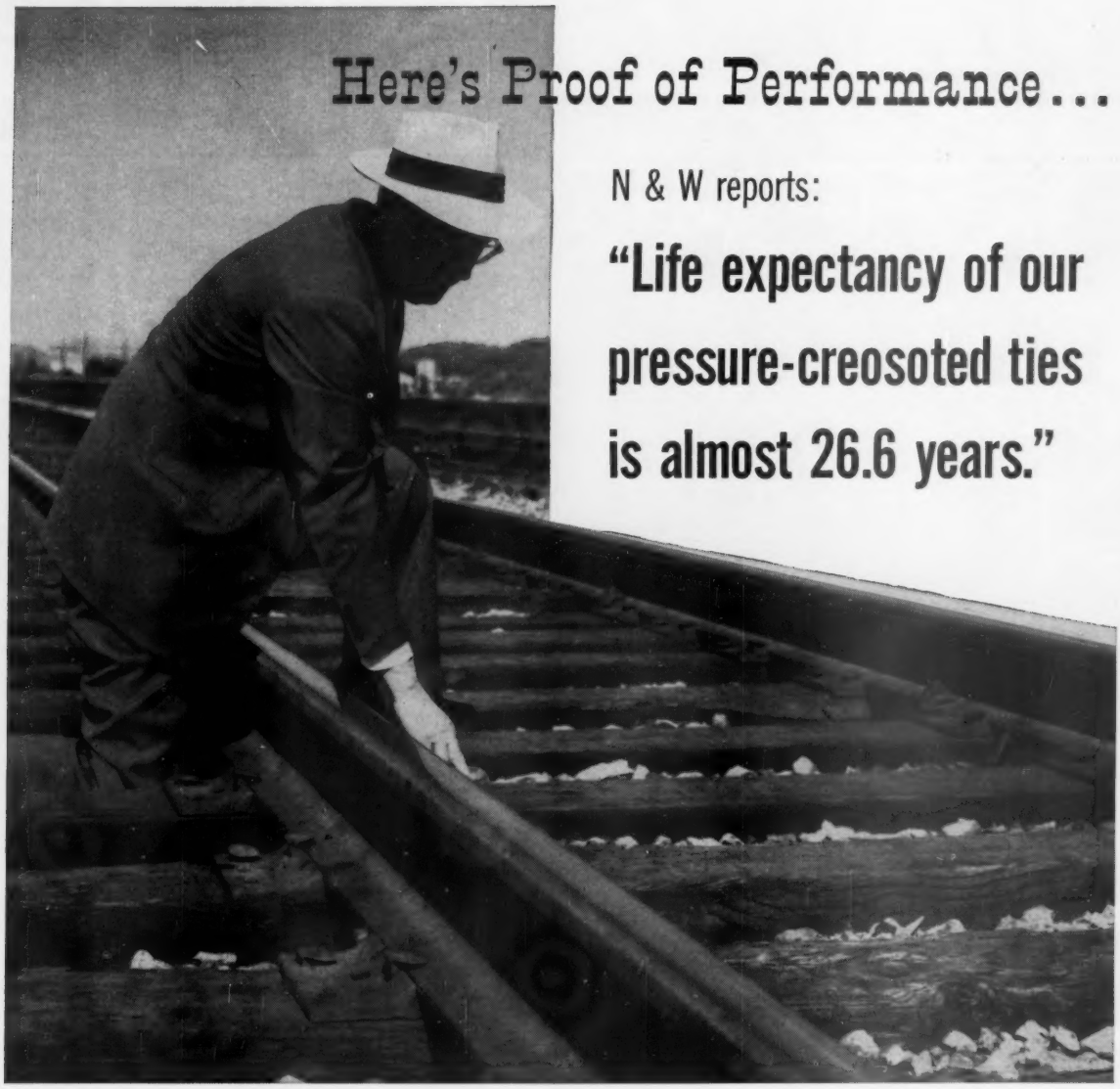
EQUIPMENT which performs at the dictation of the control panel on the station platform is mounted in rear of a station wagon. Panel at right governs stopping, starting, forward and reverse motions of train. Panel at left contains transmitter, receiver and power unit.

Remote control of a train from a wayside station was demonstrated on the New Haven on December 1. The train consisted of a single rectifier type m-u car which was operated between New Rochelle, N.Y., and Rye, 7.5 miles. For the demonstration this section of line and the car were equipped with an inductive type contact system for operating the car, with automatic train control including train stop, and an inductive type two-way telephone communication system between the wayside control point and the car.

The car was started and stopped and run in both directions from the wayside control and allowed to be stopped automatically by the train stop with no one in the operator's cab. Control equipment on the car, which would normally be mounted underneath, was placed inside the car for demonstration purposes.

The equipment for remotely controlling the operation of the train is a recent development of Union Switch & Signal Division of Westinghouse Air Brake Company, and used first in classification yard service. A visual indicator on the train displays the control commands transmitted from the wayside station and can display

(Continued on page 55)



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N & W reports:

"Life expectancy of our pressure-creosoted ties is almost 26.6 years."

Length of service and freedom from undue maintenance are two very important factors to be considered in the purchase of any type of equipment . . . and often outweigh an apparently higher first cost. This is especially true when it comes to the choice of pressure-creosoted crossties or untreated ties.

Here's what the Norfolk and Western Railway Co. has to say about pressure-creosoted railroad ties. "Cost for installation of treated ties runs about $5 each. An untreated tie would cost about $4. But the pressure-creosoted ties last from 2½ to 3 times as long," says Mr. H. D. Simpson, maintenance engineer. "A number of the ties installed in 1921 are still in use. Life expectancy of our pressure-creosoted ties is about 26.6 years, based on renewals of the last five years. Our use of treated ties is a matter of simple economy, for we've found that maintenance is greatly relieved by their installation."

Any railroad in the country can get excellent service from the use of railroad crossties that have been pressure-treated with USS Creosote. For more information, contact our nearest Coal Chemical sales office listed below, or write to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

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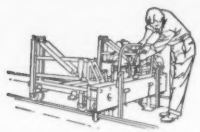
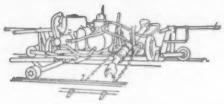
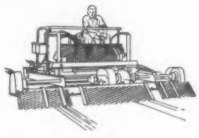
Through the course of its fifty years, Fairmont has turned its skill and ingenuity to virtually every problem confronting railway maintenance. And in each case, the result is written clearly in the record. Take a look, for instance, at the masterful products which Fairmont currently produces to assist the industry in the task of tie renewal. To be sure, they are only a few of the units which Fairmont manufactures for this field of maintenance—but they do emphasize the great scope, the wide variety and the unquestioned quality of all Fairmont tie renewal products. And, as experienced railway personnel know, they are thoroughly "Fairmont" in their dependability, their economy and their thoroughness of operation. In short, they offer positive proof that when you think of tie renewal, it *pays* to think of Fairmont—the first and finest name in railway maintenance!



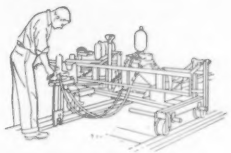
W86 SERIES A Hydraulic Rail Lifter features a spring-counterbalanced lifting arm, welded steel supporting frame and a direct-driven hydraulic pump. Two-man track removal.



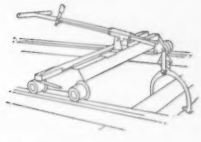
W68 SERIES A Hydraulic Tie Remover removes ties at an average rate of approximately one per minute. Ruggedly built with a minimum of moving parts. Two-man operation.



W87 SERIES A Tie Bed Scarifier with one operator can dig a tie bed a minute to a controlled depth at right angles to rails. Assembly and drive are hydraulically operated.



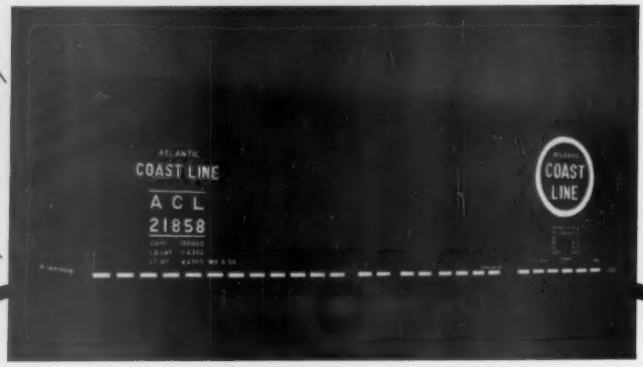
W84 SERIES B Hydraulic Spike Puller is primarily for use in tie gangs. Light in weight, it features a ball and socket-mounted pull assembly. Will pull from either rail without change-over.



W83 SERIES A Tie Nipper features a simple linkage and lever which guarantee positive opening and closing of hooks. The handle can be placed in three different positions.

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA

MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.



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Reflectorize with gleaming Prismo. Apply all-weather, all hour visibility to your rolling stock, markers and signs . . . make them safer by letting them be seen . . . overcome the serious problem of nighttime grade-crossing accidents!

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Don't let the darkness hide your identification! Let the name of your road and your slogans be seen "after hours" by applying a coat of glittering Prismo. Tremendous attention value to your name gleaming along in the night.

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Automobiles running into the sides of rolling stock, at night, accounted for 32% of all railroad accidents in 1948-51 . . . have caused a sharp increase in insurance rates. Apply highly-visible Prismo, increases safety at crossings, reduces your insurance rates!

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When your rolling stock is marked with shining Prismo there's no trouble making identification at the "hump." The brilliant gleam of Prismo reflects car number, etc. from long distances in all kinds of weather.

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Prismo saves you 75% on reflectorizing costs! Prismo is easy and inexpensive to apply and lasts years and years without peeling. Wears so well that it will outlive four coats of ordinary marking material. Prismo is the BEST for long-lasting, low-cost reflectorizing.

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For complete information, send today for your free copy of Bulletin #R-754.

14-12

PRISMO SAFETY CORPORATION • HUNTINGDON, PENNA.

TRAIN RUNS BY REMOTE CONTROL

(Continued from page 50)

the "brakes off," "power on-east," or "power on-west."

The wayside equipment has a locomotive control panel with two miniature-type control levers. One lever selects either eastward or westward running and the other selects between neutral, run, and stop. When the lever is on neutral, the train brakes are released and power is cut off. When the lever is turned to the run position, power is applied and the locomotive runs in the direction selected by the other lever. When the lever is placed in the stop position a service application of the train brakes follows, bringing the train to a stop.

The electronic portion of the wayside equipment consists of a power supply, an audio oscillator and a carrier modulator. The equipment creates a carrier frequency by means of an oscillator, modulates this carrier with certain audio frequencies and amplifies this modulated carrier to the desired level of signal current. The output of the carrier modulator is connected to the existing line wires which parallel the track. The position of the two miniature type levers on the locomotive control panel determines which audio frequencies are to be introduced into the carrier modulator. When the lever is in the run position, a pair of audio frequencies is introduced into the modulator—when the lever is in the neutral position only one audio frequency is used—and when it is at stop no audio frequencies are present.

The control commands from the wayside station are transmitted through inductive coupling between the modulated carrier current flowing in the line wires and a receiving coil mounted on the locomotive. The locomotive equipment is tuned to accept and act on the received signal indications from the wayside control panel.

To run the train east a carrier frequency of 94 kc is modulated by a 225-cycle current. To apply power a modulating current of 535 cycles is added to the 225. To stop, modulation is removed. To run west modulations of 1,125 and 535 cycles are used. A carrier frequency of 144 kc is used for telephone communication.

For safety during the demonstration, the m-u car was equipped with standard Union cab signal equipment. This equipment is continuously responsive to rail-carried currents which reflect track conditions ahead, such conditions being indicated on the cab signals. If the train should be moving and conditions in advance such that it is not safe for the train to continue, the brakes will be automatically applied and the train will be brought to a stop regardless of the controls being issued from the wayside station. The cab signal equipment in this demonstration for the first time employs junction-type silicon transistors in place of vacuum tubes.

A REPRESENTATIVE of Union Switch & Signal explains operation of the equipment installed in the car during the test run. The large metal case in foreground contains cab signal receiving equipment which picks up coded signals by the rail from the signal system already in service on the railroad. Mounted on it at top left is a four-acceptance indicator light panel. As the receiver picks up the coded signal, visual lights come on the panel. Top is green for clear board ahead, next shows yellow over green for the signal just past, next a yellow indicator for the approach signal ahead, and bottom, red indicator which indicates restrictive block and will stop the train. The second metal case at left which also has a light indicator panel mounted on top, receives and interprets the controls given from the wayside station for remote control of the car. Telephone handset in center receives from the wayside telephone.

GATES AT FIVE CROSSINGS

(Continued from page 40)

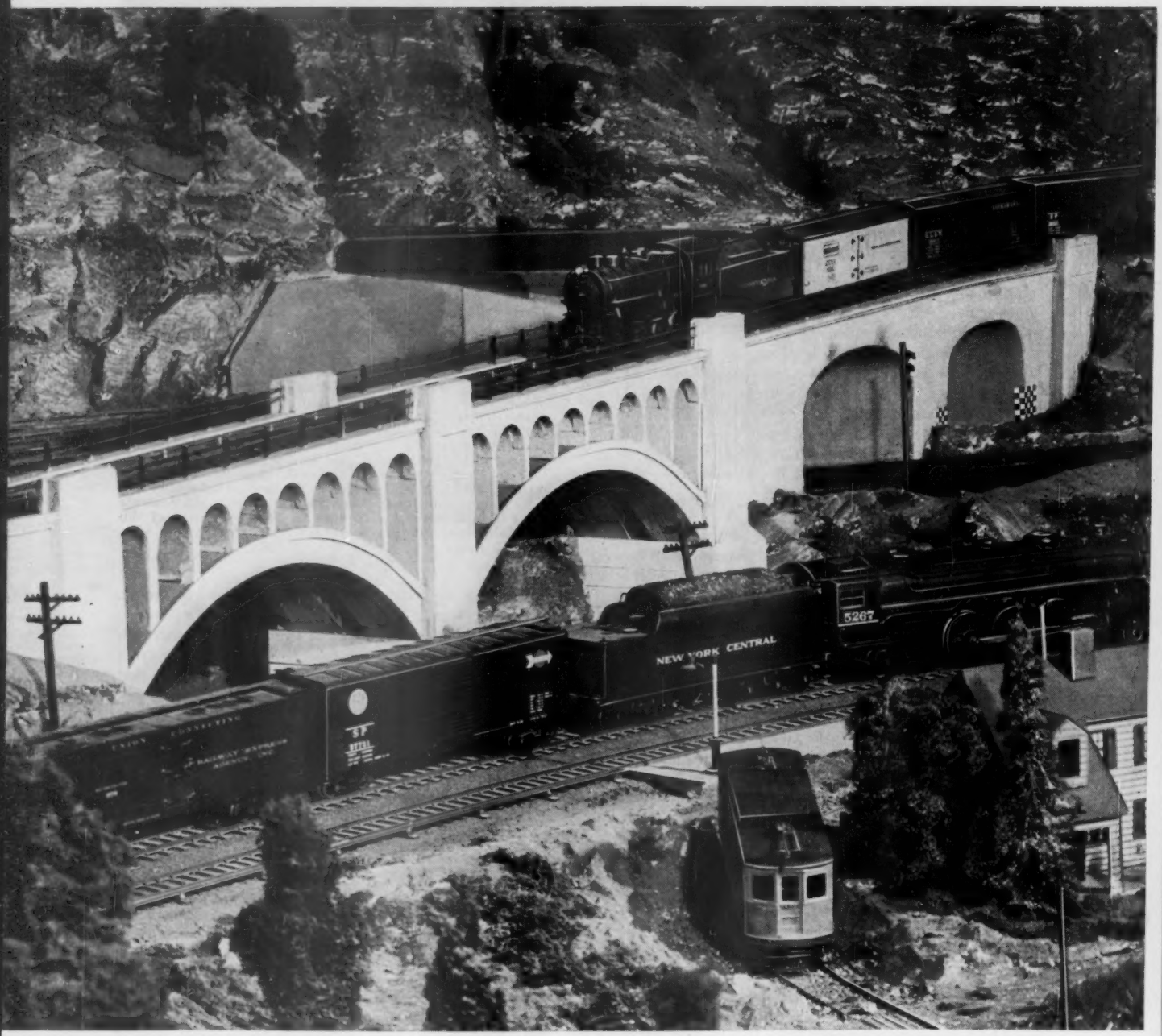
was installed, so that, for the slower moving trains, the protection does not operate until they are closer to the crossing.

For a westward passenger train that is to make a station stop, the speed selection circuits are arranged so that the protection at Heaton street (see diagram) will not be set in operation if the average speed of the train is 60 mph or less in the Heaton street first measuring section, or is 37 mph or less in the Heaton street second measuring section, and also if the train makes a station stop with the leading wheels east of Orange street crossing.

The new installation also includes supervisory manual control, the purpose of which is to cut out operation of a crossing protection and let the street traffic proceed when approach sections are occupied by switching moves, but no movement over the crossing is imminent. The manual control machine is in an elevated cabin just east of Cherry street and includes controls for protection at Cherry, Genesee, and Orange Streets. A watchman is on duty in this tower 8 a.m. to 4 p.m. daily except Sunday. Details of the operation of the manual control machine and the special circuits for speed selection, time out controls, and switch cut outs will appear in an article in the January, 1956, *Railway Signaling & Communications.*

The signals with short-arm gates and the supervisory control panel were manufactured by the Griswold Signal Company. Relays and other signal material were manufactured by the General Railway Signal Company. The installation was planned and constructed by signal department forces under the direction of H. T. Fleisher, assistant chief engineer, communications and signals.

From power to signaling—Anaconda can



PICTURE COURTESY OF N. Y. SOCIETY OF MODEL ENGINEERS

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Telephone cable, 6-404 pair
Radio hook-up wire
Track wire and cable
Train control wire
Control cable

1000-volt control cable
Traffic control cable
Flexible cords
Motor lead wire
Rubber power cable
High-voltage rubber cable
Paper-lead power cable
Varnished-cambric power cable
Battery cable
Rail bond cable
Aerial cable
Parkway cable

Nonmetallic-sheathed underground cable
Interlocked-armor cable
Submarine cable
Portable cables
Potheads, capnut type
Potheads, soldersealed type
Jointing kits
Bare copper wire and cable
Bare aluminum wire and cable
Copperweld-copper bare cable
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Trolley wire
Weatherproof wire and cable
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Plastic building wire
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MODEL RAILROAD serves to illustrate the wide range of wires and cables made by Anaconda for all phases of railroading.

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The listing on the left shows the many Anaconda wires and cables available for railroad applications. Why not clip this advertisement and keep it for handy reference?

For more information, call the Man from Anaconda. Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

55267

ANACONDA®

Labor & Wages

Supreme Court to Review Outlawing of Closed Shop

The United States Supreme Court has agreed to review rulings of Nebraska courts which held that enforcement of a union shop agreement between the Union Pacific and unions representing its non-operating employees was not permissible under that state's "right to work" laws. At stake in the case is the validity of the union shop amendment added to the Railway Labor Act in 1951.

The case is docketed in the Supreme Court as No. 451, Railway Employees Department, American Federation of Labor *v.* Hanson. It came up from the Supreme Court of Nebraska, which held the union shop amendment was unconstitutional in that it violates the right to work and right of association (*Railway Age*, July 25, page 10).

Supply Trade

John D. Dickinson, for the past 28½ years employed by **Lima Locomotive Works, Inc., Lima-Hamilton Corporation** and **Baldwin-Lima Hamilton Corporation,** has resigned. Mr. Dickinson, who was eastern locomotive sales representative of the latter corporation at the time of his resignation, is establishing his own business as a manufacturers' agent calling on railways in eastern territory.

The **Bear Manufacturing Company** has appointed **T-Z Railway Equipment Company,** Chicago, exclusive representative of Bear balancing machines for the railway industry.

Effective December 1, the **Superior Hand Brake Company** moved into its new office adjacent to the shop at Dundee, Ill.

The **Railroad Parts Service Company,** Detroit, has appointed **Ray W. Freikschat & Son,** Chicago, as its national representative contacting railroads in the United States.

Gordon H. Proffitt has been appointed transportation sales representative of **Pantasote Company** for the West Coast area at San Francisco, succeeding **Carl E. Danelson** of Los Angeles, who died October 28.

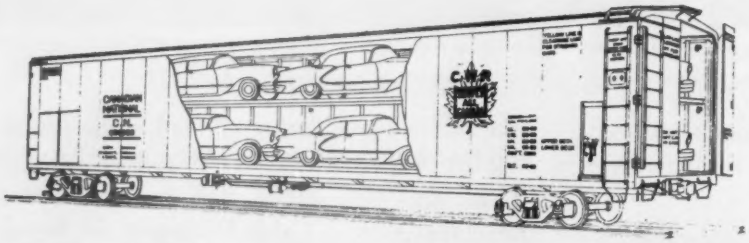
Douglas V. Hamilton has been elected vice-president and general manager of **Griffin Steel Foundries.** He was formerly general manager of the plant at St. Hyacinthe, Que.

The general office of **American Steel Foundries** is now at Prudential Plaza, Chicago.

B. H. Sullivan, Jr., member of the Chicago sales staff of **Magnus Metal Corporation,** has been appointed assistant vice-president, at Chicago. **J. J. Croft** has been named St. Louis district sales manager, and **L. J. Gruber** has been transferred from Cincinnati to the Chicago sales staff.

B. H. Sullivan, Jr.

Stanley H. Smith & Co., Cleveland, have been appointed eastern representatives for sales of railroad and industrial equipment of the **Griswold Signal Company,** manufacturers of highway crossing protective devices and signal accessory items.



NEW DOUBLE-DECK CAR for transporting automobiles is shown in an artist's sketch. Twenty-five such cars, each of which will carry eight automobiles, are being built for the Canadian National by Canadian Car & Foundry Co. (*Railway Age*, November 14, page 12).

GOFF SMITH, executive vice-president, Griffin Wheel Company, who has been elected president, to succeed Edmund Q. Sylvester, resigned.

C. W. Floyd Coffin, formerly vice-president of **Franklin Railway Supply Company,** was elected executive vice-president, effective December 1.

George L. Rutherford, John R. Sinding and **Harry Lock** have been named vice-presidents of **Spring Packing Corporation,** Chicago, and **William J. Ennis,** assistant vice-president.

Joseph T. Ryerson & Son, Inc., have entered an agreement to purchase from the Seaboard Air Line an 11½-acre tract at Pinoca, N.C., immediately northwest of Charlotte, as the site for a new steel service plant, to be erected in the near future.

Roger B. Coleman, salesman, railroad division, **Chipman Chemical Company,** has been promoted to assistant railroad division sales manager, at Bound Brook, N.J.

G. O. Britton has been appointed manager of distributor sales, **American Hoist & Derrick Company,** St. Paul. He was formerly general sales manager of **Schield Bantam Company.**

Charles T. Schwarz, a salesman for **Yale & Towne Manufacturing Company** at Chicago, has been promoted to branch sales manager there.

Effective January 1, 1956, **Richard H. DeMott,** chairman of the board and president, **SKF Industries, Inc.,** will relinquish the post of president, but will continue to serve as board chairman. **Edwin R. Broden,** executive vice-president, will succeed Mr. DeMott as president and chief executive officer.

OBITUARY

A. J. Rose, 66, vice-president, sales, Greenville Steel Car Company, died in Greenville (Pa.) Hospital, Novem-

Why tie up your money in communications equipment?

When you let the Bell System furnish your communications, you enjoy three important advantages:

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ber 30, shortly after he was stricken with a heart attack.

Major General **Carl R. Gray, Jr.,** 66, former Veterans Administrator, director of the Military Railway Service in World War II, and vice-president of the Chicago & North Western, died December 2 in a hospital at St. Paul, Minn.

●

Meetings and Conventions

The following list gives names and addresses of secretaries, and dates and places of next or regular meeting.

AIR BRAKE ASSOCIATION.—Lawrence Wilcox. Room 827, 80 E. Jackson Blvd., Chicago 4.

ALLIED RAILWAY SUPPLY ASSOCIATION.—C. F. Weil, P. O. Box 5522, Chicago 80.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—T. R. Stanton, 1450 Railway Exchange Bldg., St. Louis 1. Annual meeting, June 20-22, 1956, Hotel Utah, Salt Lake City.

AMERICAN ASSOCIATION OF PASSENGER RATE MEN.—R. H. Chermak, 702 Union Station, Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, Eastern Time Table Distributing Company, Liberty Street Terminal, New York 6.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5. Annual meeting, June 5-7, 1956, LaSalle Hotel, Chicago.

AMERICAN ASSOCIATION OF TRAVELING PASSENGER AGENTS.—C. A. Melin, P. O. Box 5025, Cleveland 1.

AMERICAN COUNCIL OF RAILROAD WOMEN.—Mrs. Jane Beebe, New York, New Haven & Hartford, Boston 27.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5. Annual Meeting, September 18-20, 1956, Conrad Hilton Hotel, Chicago.

AMERICAN RAILWAY CAR INSTITUTE.—W. A. Renz, 19 E. 47th St., New York 17.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—F. E. Wolff, Canadian Pacific, Toronto 1, Ont. Annual meeting, April 22-25, 1956, Peabody Hotel, Memphis.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division—Neal D. Howard, 59 E. Van Buren St., Chicago 5. Annual meeting, March 13-15, 1956. Palmer House, Chicago.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—G. P. McCallum, New York, New Haven, & Hartford, Room 2050, Grand Central Terminal, New York 17.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—C. E. Huntley, 2000 Massachusetts Ave., N.W., Washington 6. D. C.

AMERICAN SOCIETY FOR TESTING MATERIALS.—R. J. Painter, 1916 Race St., Philadelphia 3. Committee Week, February 27-March 2, 1956. Hotel Statler, Buffalo. Annual meeting and exhibit, June 17-22, 1956, Chalfonte-Haddon Hall, Atlantic City. Pacific Area meeeting and exhibit, September 16-22, 1956, Hotel Statler, Los Angeles.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18.

RAILROAD DIVISION.—R. L. Wilson, American Brake Shoe Company, Mahwah, N. J.

AMERICAN WOOD-PRESERVER'S ASSOCIATION.—W. A. Penrose, 839 Seventeenth St., N.W., Washington 6, D. C. Annual meeting, April 23-25, 1956, Jung Hotel, New Orleans.

ASSOCIATED TRAFFIC CLUBS OF AMERICA.—R. P. DeGroote, Luckenbach Steamship Co., Inc., 110 S. Dearborn St., Room 1107, Chicago 3.—Annual meeting, October 24-25, 1956, Hotel Seville, Miami Beach, Fla.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—P. E. Griffith, 2028 Clark Ave., St. Louis 3.

ASSOCIATION OF AMERICAN RAILROADS.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—R. C. May, Vice-president, Transportation Bldg., Washington 6, D.C.

Operating-Transportation Division.—A. I. Ciliske, 59 E. Van Buren St., Chicago 5.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5.

Operating Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Communications Section.—A. H. Grothmann, 59 E. Van Buren St., Chicago 5. Annual Meeting, May 22-24, 1956, Netherlands Plaza Hotel, Cincinnati.

Fire Protection and Insurance Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5.

Freight Loss and Damage Prevention Section.—G. H. Ruhle, 59 E. Van Buren St., Chicago 5. Annual meeting, May 2, 1956, St. Charles Hotel, New Orleans.

Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5. Annual meeting, April 24-26, 1956, Statler Hotel, Cleveland.

Medical and Surgical Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Protective Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Safety Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Electrical Section of the Engineering and Mechanical Divisions.—S. W. Marras, 59 E. Van Buren St., Chicago 5. Annual meeting, June 26-28, 1956, Hotel Sherman, Chicago.

Engineering Division.—E. G. Gehrke, 59 E. Van Buren St., Chicago 5.

Construction and Maintenance Section.—Neal D. Howard, 59 E. Van Buren St., Chicago 5. Annual meeting, March 13-15, 1956, Palmer House, Chicago.

Signal Section.—R. H. C. Balliet, 59 E. Van Buren St., Chicago 5.

Mechanical Division.—Fred Peronto, 59 E. Van Buren st., Chicago 5. Annual meeting, June 26-28, 1956. Hotel Sherman, Chicago.

Purchases and Stores Division.—John L. Timanus, Transportation Bldg., Washington 6, D. C. Annual meeting, May 16-18, 1956, Jefferson Hotel, St. Louis.

Freight Claim Division.—R. E. O'Donnell, 59 E. Van Buren St., Chicago 5. Annual meeting, May 1 and 3, 1956, St. Charles Hotel, New Orleans.

General Claims Division.—Bruce H. Smith, 59 E. Van Buren St., Chicago 5. Annual meeting, April 17-20, 1956, Shamrock Hotel, Houston.

Car Service Division.—Arthur H. Gass, Chairman, Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—Arthur R. Seder, Vice-president, Transportation Bldg., Washington 6, D. C.

Accounting Division.—R. E. Keefer, Transportation Bldg., Washington 6, D. C. Annual meeting, May 28-31, 1956, Statler-Hilton Hotel, Los Angeles.

Treasury Division.—R. E. Keefer, Transportation Bldg., Washington 6, D. C. Annual meeting, September 17-20, 1956, Chateau Frontenac, Quebec.

ASSOCIATION OF INTERSTATE COMMERCE COMMISSION PRACTITIONERS.—Miss Sarah F. McDonough Executive Secretary, 2218 ICC Building, Washington 25, D. C.

ASSOCIATION OF RAILROAD ADVERTISING MANAGERS.—A. W. Eckstein, Illinois Central, 135 E. Eleventh Pl., Chicago 5. Annual meeting January 26-28 1956, Hotel Biltmore, New York.

BRIDGE AND BUILDING SUPPLY ASSOCIATION.—L. R. Gurley, Modern Railroads, 201 N. Wells St., Chicago 6. Exhibit in conjunction with meeting of American Railway Bridge & Building Association, September 17-20, 1956, The Coliseum, Chicago.

CANADIAN RAILWAY CLUB.—G. R. Fitt, Canadian Pacific Railway, Windsor Station, Montreal 3, Quebec. Regular meetings, second Monday of each month, except June, July and August. Sheraton-Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS.—E. S. Walsh, 2606 Scott Ave., St. Louis 3. Regular meetings fourth Tuesday of each month except June, July, August and December, Hotel DeSoto.

CAR DEPARTMENT OFFICERS' ASSOCIATION—F. H. Stremmel, 6536 N. Oxford Ave., Chicago 31.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—W. R. McCain, North American Car Corp., 231 S. La Salle St., Chicago 4. Regular meetings, second Monday of each month except June, July and August, LaSalle Hotel.

CAR FOREMEN'S ASSOCIATION OF OMAHA, COUNCIL BLUFFS AND SOUTH OMAHA INTERCHANGE.—C. G. Poetzel, Chicago & North Western, 11th St. and Avenue J., Council Bluffs, Ia. Regular meetings, second Tuesday of each month, except July and August. Chieftain Hotel, Council Bluffs.

CENTRAL RAILWAY CLUB OF BUFFALO.—J. A. Gorman, 1817 Hotel Statler, Buffalo 5. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler.

CHICAGO RAILROAD DIESEL CLUB.—E. C. Fosdick, 4226 W. Washington Blvd., Chicago 24. Regular meetings first Thursday after first Sunday of each month except July and August, Hotel Sherman, 7:30 p.m.

CHICAGO RAILROADS CAR ACCOUNTING OFFICERS.—Max Jauch (chairman), Chicago & North Western, 4809 N. Ravenswood Ave., Chicago 40. Regular meetings last Wednesday of each month, except July and August, Midland Hotel, at 12:15 p.m.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. C. Rochester, Canadian National, 891 Notre Dame St., West, Montreal 3.

EASTERN CAR FOREMAN'S ASSOCIATION.—W. P. Dizard, 30 Church St., New York 7. Regular meetings, second Friday of January, February, March, April, May, October and November, 29 W. 39th St., New York.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark.

MAINTENANCE OF WAY CLUB OF CHICAGO.—S. Kosco, 135 E. Eleventh Place, Chicago 5. Regular meetings, October through April, Hamilton Hotel, Chicago.

METROPOLITAN MAINTENANCE OF WAY CLUB.—John S. Vreeland, Simmons-Boardman Publishing Corp., 30 Church St., New York 7. Meets in February, April, October and December, Railroad Machinery Club, 30 Church St., New York.

MILITARY RAILWAY SERVICE VETERANS.—F. W. Okie, Union R.R., Frick Bldg., P. O. Box 536, Pittsburgh.

MISSISSIPPI VALLEY MAINTENANCE OF WAY CLUB.—P. E. Odom, 1025 Frisco Building, 906 Olive St., St. Louis. Regular meetings second Monday of each month September through May, DeSoto Hotel, St. Louis.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—R. Everette Kreeger. 7413 New Post Office Bldg., P. O. Box 684, Washington 4, D. C.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—F. Easterling, Brown Paper Company, West Monroe, La. Annual meeting, October 16-18, 1956, Ambassador Hotel, Los Angeles.

NATIONAL DEFENSE TRANSPORTATION ASSOCIATION.—Mrs. Lois C. Gebran, Suite 728, 1001 Connecticut Ave., Washington 6, D. C.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—L. J. Dorr, Suite 909, Sheraton Bldg., 711 14th St., Washington 5, D. C. Annual meeting, November 15-16, 1956, Commodore Hotel, New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—Kenneth Cavins, Fairmont Railway Motors, Inc., 310 S. Michigan Ave., Chicago 4. Lewis Thomas, Asst. Secy., 59 E. Van Buren St., Chicago 5.

NATIONAL SAFETY COUNCIL RAILROAD SECTION.—J. H. Williams, Texas & Pacific, Texas & Pacific Bldg., Dallas 2.

NEW ENGLAND RAILROAD CLUB.—William M. McCombs, 35 Lewis Wharf, Boston 10. Regular meetings, second Tuesday of each month, except May-September, incl. Hotel Vendome, Boston.

NEW YORK RAILROAD CLUB.—John Burry, 30 Church St., New York 7. Regular meetings, third Thursday of each month except June, July, August, September and December. Century Room, Commodore Hotel. Reception, 6 p.m.; dinner, 7; meeting, 8:15.

NORTHWEST CARMEN'S ASSOCIATION.—N. J. Maglich, Minnesota Transfer Ry., 2071 University Ave., St. Paul 4, Minn. Regular meetings, first Monday of each month, except June, July, and August, Midway Club, 1931 University Ave., St. Paul.

NORTHWEST LOCOMOTIVE ASSOCIATION.—W. N. Cox, Northern Pacific, St. Paul 1, Minn. Regular meetings, third Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul.

NORTHWEST MAINTENANCE OF WAY CLUB.—L. C. Blanchard, Milwaukee Passenger Depot, Minneapolis 1. Regular meetings, fourth Thursday of each month, September through April, inclusive, excepting November and December which are third Thursday, Midway Club, 1931 University Ave., St. Paul.

PACIFIC RAILWAY CLUB.—S. E. Byler, 121 E. Sixth St., Los Angeles 14. Regular meetings, second Thursday of each alternate month at Palace Hotel, San Francisco, and Elks' Temple, Los Angeles.

RAILROAD PUBLIC RELATIONS ASSOCIATION.—J. Don Parel, Association of American Railroads, Transportation Bldg., Washington 6, D. C.

RAILWAY CLUB OF PITTSBURGH.—G. E. Morrison, 2710 Koppers Bldg., Pittsburgh 19. Regular meetings third Thursday of each month, except June-September, incl. and December, Hotel Sherwyn. Dinner, 6:30 p.m.; meeting, 8.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—L. R. Oswald, Thos. A. Edison, Inc., 1500 S. Western Ave., Chicago 8.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—L. H. Peters, New York Central, Room 1213, 139 W. Van Buren St., Chicago 5.

RAILWAY PROGRESS INSTITUTE.—T. A. Nooner, Jr., First National Bank Bldg., Chicago.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—A. W. Brown, 527 Lexington Ave., New York 17.

RAILWAY SYSTEMS AND PROCEDURES ASSOCIATION.—J. W. Milliken, *Railway Age*, 30 Church St., New York 7.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7. Meets with Communications Section of AAR.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 1221 Locust St., St. Louis 3. Annual meeting, October 24-26, 1956, Hotel Roanoke, Roanoke, Va.

ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5. Annual meeting, September 18-20, 1956, Conrad Hilton Hotel, Chicago.

ST. LOUIS RAILROAD DIESEL CLUB.—F. C. Whitlock, Terminal Railroad Association of St. Louis, 376 Union Station, St. Louis 3. Regular meetings second Tuesday of each month, Hotel York. Dinner, 6:45 p.m.; meeting, 8.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7. Meets with AAR Signal Section.

SOUTHEASTERN RAILWAY DIESEL CLUB.—H. W. Brewer, Seaboard Air Line, P. O. Box 1654, Norfolk, Va. Regular meetings, second Tuesday in February, April, June, August, October and December, 9:30 a.m., Mayflower Hotel, Jacksonville.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E. Atlanta. Regular meetings, third Thursday in January, March, May, and November at Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—F. I. Umhau, Southern Ry., Atlanta 3. Next meeting, January 25-26, 1956, Birmingham, Ala.

TORONTO RAILWAY CLUB.—H. W. Somerville, P. O. Box 8, Terminal "A," Toronto 1, Ont. Regular meetings, fourth Monday of each month except February, June, July, August and December, Royal York Hotel.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q and C Company, 59 E. Van Buren St., Chicago 5. Exhibit in conjunction with meeting of Roadmasters & Maintenance of Way Association, September 17-20, 1956, The Coliseum, Chicago.

WESTERN ASSOCIATION OF RAILWAY TAX COMMISSIONERS.—L. R. Norberg, 516 W. Jackson Blvd., Chicago 6. Regular meetings, 12:15 p.m., first Wednesday of each month, except July and August, Traffic Club, Palmer House, Chicago.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago 1. Meetings at Hotel Sherman, December 17, 1955. February 13, March 19, April 16, May 21, 1956.

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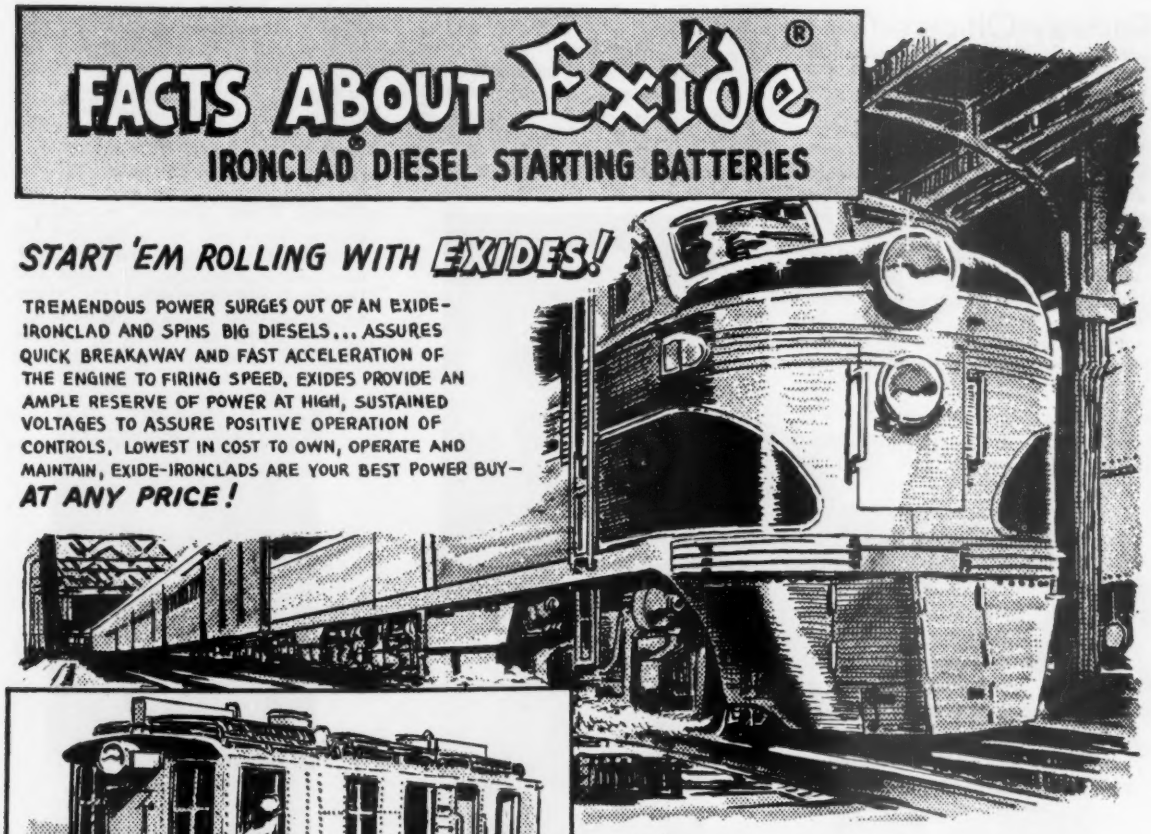

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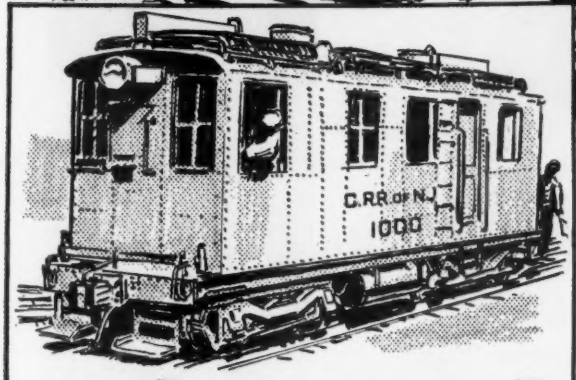

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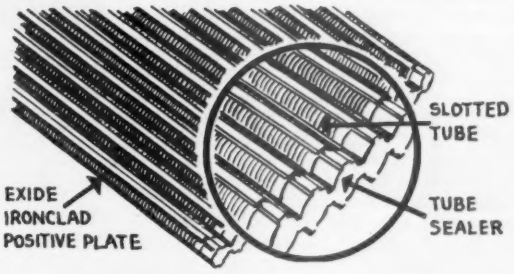

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Railway Officers

Ralph E. Sease Elected Susquehanna President

Ralph E. Sease, general manager of the Central of Georgia at Savannah, was elected president of the New York, Susquehanna & Western December 1, to succeed James M. Baths, who has been serving as president of the Susquehanna since the annual meeting last April. Mr. Baths had asked to be relieved on January 1, 1956, to devote more time to his personal affairs. He will continue as a director.

Mr. Sease, born in Prosperity, S.C., January 22, 1905, was graduated from Clemson College (B.S.C.E. 1925). He

Ralph E. Sease

worked with the Alabama State Highway Department and the Atlantic Coast Line before joining the CofG as draftsman in the engineering department in November 1928. Mr. Sease was promoted to assistant engineer in 1935, track supervisor in 1941, supervisor of bridges and buildings in September 1945, terminal trainmaster at Atlanta in November 1945, superintendent of the Columbus division in January 1952, superintendent transportation at Savannah in July 1953, general superintendent of transportation in January 1954, assistant general manager in July 1954, and general manager in April 1955.

NEW YORK CENTRAL.—**Walter R. Grant** has been named vice-president—finance at New York, succeeding **Willard F. Place** (*Railway Age*, September 5, page 55). Mr. Grant, who is 45 years old, served for four years as vice-president of the Studebaker—Packard Corporation in Detroit. Before that he was vice-president—finance for Hotpoint Inc., a subsidiary of the General Electric Company in Chicago.

Effective January 1, 1956, **Karl A. Borntrager,** vice-president of operations and maintenance at New York, will be named senior vice-president. **Kenneth L. Moriarty,** chief engineer—system at New York, will become vice-president—operation. **A. W. Laskoske,** general manager, Line East, at Syracuse, N.Y., will be named assistant vice-president—operation. **W. F. Kascal,** chief mechanical officer at New York, will be appointed assistant vice-president—equipment. **Edward J. Gibbons,** general manager of the Big Four at Indianapolis, will replace Mr. Laskoske as general manager at Syracuse. **G. W. Maxwell,** general superintendent, Line West at Cleveland, will become general manager at Indianapolis, succeeding Mr. Gibbons.

Walter R. Grant

Karl A. Borntrager

Kenneth L. Moriarty

Curtis D. Buford, formerly west and western division superintendent and more recently serving on special assignment from system headquarters in New York, will be appointed assistant general manager at Cleveland.

Mr. Moriarty was born November 18, 1896, at Joliet, Ill., and entered railroad service in December 1917 in the engineering department of the Chicago Great Western, serving in various positions, including that of assistant engineer, maintenance of way department. In 1924 he joined the Denver & Rio Grande Western where he served successively as division engineer, roadmaster, trainmaster, assistant superintendent, division superintendent, assistant chief engineer, chief engineer, assistant general manager, general manager and vice-president—operation. In October 1954 Mr. Moriarty went with the NYC as chief engineer—system.

A. W. Laskoske

W. F. Kascal

Mr. Laskoske was born at Michigan City, Ind., July 21, 1901, and entered railroad service with the NYC in September 1917 as yard clerk at Michigan City. After serving in various other capacities he was appointed assistant trainmaster, trainmaster, assistant superintendent, and division superintendent, successively. Mr. Laskoske was appointed general manager, Michigan Central district in January 1953, becoming general manager, Lines East in July 1954.

Mr. Kascal was born at Chicago October 20, 1901, and entered railton as machinist, later serving as road service in 1922 with the Burlingroundhouse foreman and acting master mechanic. In 1943 he went with the Colorado & Southern as master mechanic, becoming superintendent motive power in 1947. From 1949 to 1954 Mr. Kascal was mechanical su-

G. W. Maxwell

Curtis D. Buford

perintendent, Texas & Pacific, at Dallas, Tex., becoming chief mechanical officer of the NYC system in September 1954.

Mr. Maxwell, born at Toledo, Ohio, July 21, 1917, attended the University of Michigan (B.S. in Transportation Engineering 1939) and Harvard University Graduate School of Business Administration, Advanced Management Program (1954). He entered railroad service in 1939 as stenographer for manager of freight transportation, NYC, at New York, later becoming traveling car agent. After service as captain with the Transportation Corps, United States Army, ETO, he returned to the NYC in 1946 as assistant trainmaster. Subsequently, he served as trainmaster, assistant to general manager, assistant division superintendent and superintendent. He was appointed general superintendent, New York district in March 1954, becoming general superintendent, Lines West, at Cleveland three months later.

PITTSBURGH & WEST VIRGINIA.—J. W. Poland has been appointed general agent at Philadelphia.

RAILWAY EXPRESS AGENCY.—Russell E. Sippel, Western sales manager at Chicago, has been appointed to the newly created position of assistant director, sales, at New York.

RUTLAND.—James F. Phalen, traffic representative at Rutland, Vt., has been appointed general agent at New York, succeeding **Ray I. Nova,** transferred to Chicago. Mr. Nova succeeds the late **A. Fred Blomquist.**

SANTA FE.—W. B. Cash has been appointed assistant to general manager at Los Angeles, replacing the late **A. N. Summers** (*Railway Age*, November 21, page 54).

F. J. Steinberger, senior assistant general purchasing agent, has been appointed general purchasing agent at Chicago, succeeding **Warren W. Kelly,** who retired November 30 after more than 51 years of service.

OBITUARY

C. E. Payne, 66, general agent for the **Norfolk & Western** at Louisville, Ky., died there on November 30.

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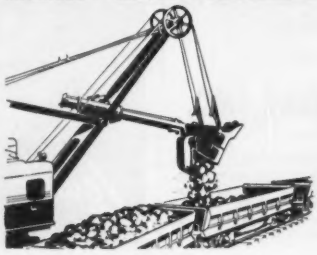

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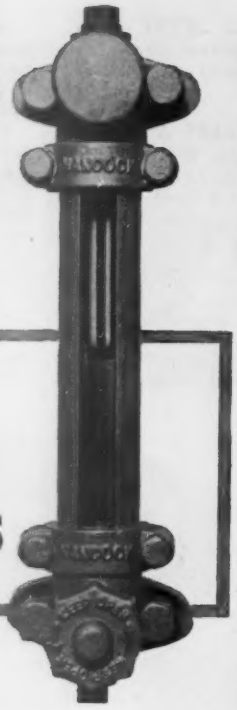

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The Hancock Sight Glass is ruggedly built to withstand shocks and vibration — has heavy forged steel top and bottom fittings and a glass protector of thick steel tubing. The glass is easy to clean *right on the tank!* Close the shut-off valve in the lower fitting, remove the top and bottom pipe plugs, then clean the glass with a brush or cloth. No need to dismantle the gauge; no danger of glass breakage.

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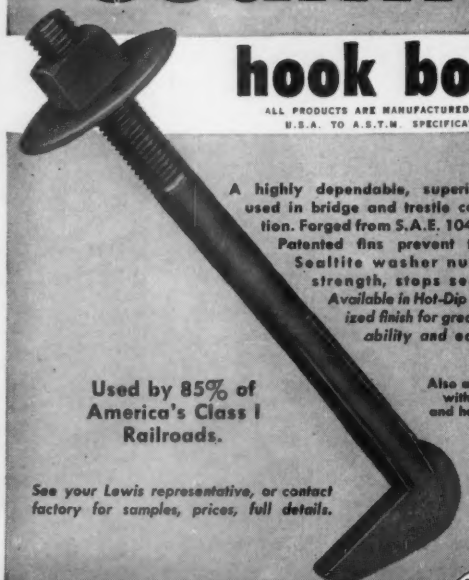

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Current Publications

BOOKS

LOCOMOTIVE AIR BRAKES. by C. M. Drennan, 296 pages, illustrations, drawings. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $6.75 with reductions for bulk orders; $3.95 each when ordered in lots of over 50. $15 for the complete set of three volumes.

This is the third volume in a series written by the retired supervisor of training of the Westinghouse Air Brake Company. The previous volumes were titled *ABC's of Air Brakes* and *Car Air Brakes*. The new volume completes coverage of the air brake field and again uses Mr. Drennan's famous "chalk talks" including simplified diagrams with photographs and explanations of equipment function. There are quizzes for assistance in self-study. Earlier locomotive equipment is described only in sufficient detail so that the principles and needs of present day equipment can be developed.

Section I includes air compressors, safety valves, feed valves, brake application valves and miscellaneous devices. Section II deals with the locomotive brake equipments and goes through the early developments and the ET equipments to the present day 6-SL and 24-RL equipment. Train control equipment is illustrated and explained. Section III describes locomotive brake equipment with electric controls, and Section IV deals with speed governor control. The book is indexed and answers to the quizzes are given.

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DIRECTORY OF RAILWAY OFFICIALS & YEAR BOOK, 1955-1956, compiled from official sources under the direction of the editor of the Railway Gazette. 536 pages. Tothill Press Limited, 33 Tothill st., Westminster, S.W.1, London. 40 shillings.

While the present edition adopts the same layout and general arrangement as those of previous years, revision of individual entries and changes in personnel are extensive. Important changes have occurred in entries relating to various units of the British Transport Commission. Additions to the section on international associations are four organizations of the United Nations. More up-to-date information on railways of Brazil is reported. Much of the "Statistical and Other Information" section has been revised.

As in previous editions, all entries are divided into two main divisions: British Commonwealth and foreign. Each section is subdivided geographically into continents and countries. There is an index to countries, a general index, and a personnel index to railway officers.

PAMPHLETS

IN ACTION AGAINST THE HOT BOX, 14 pages, illustrations. American Brake Shoe Company, National Bearing Division, 4930 Manchester ave., St. Louis 10. Free.

A progress report from American Brake Shoe's journal bearing research laboratory—a laboratory designed, built and equipped solely to investigate the hot box problem. (*Railway Age*, May 3, 1954, page 40).

•

LES CHEMINS DE FER EN FRANCE. 88 pages, illustrations, maps, charts. French National Railroads, 610 Fifth ave., New York 20. Free

The brochure is written in French, but a summary in English highlights projects to which the French National Railroads have been devoting particular effort since the war. Included are sections on permanent way, rolling stock, the traffic department, and personnel.

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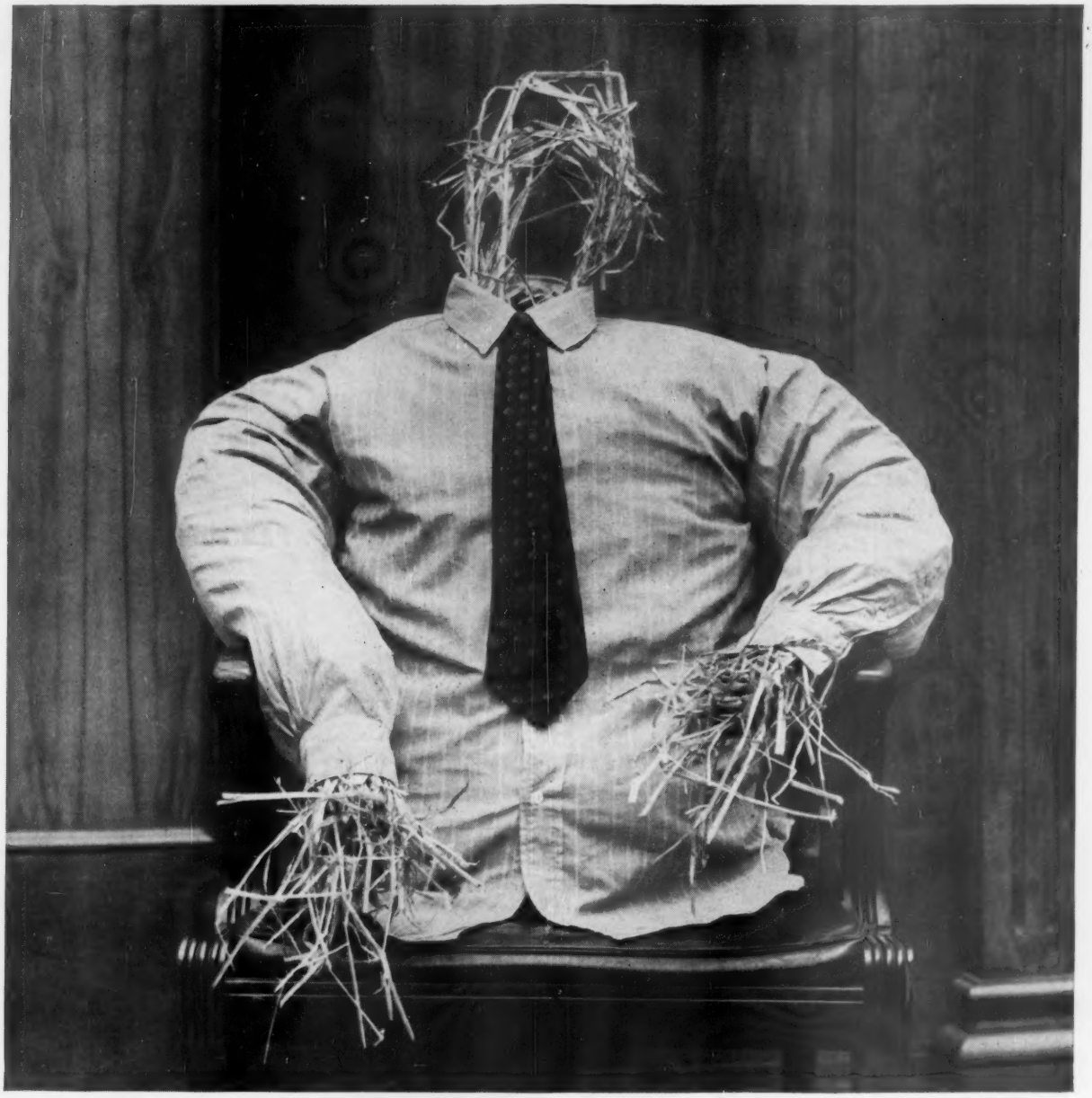
NEW YORK CITY: Ritz Tower Hotel
CLEVELAND: Hotel Cleveland



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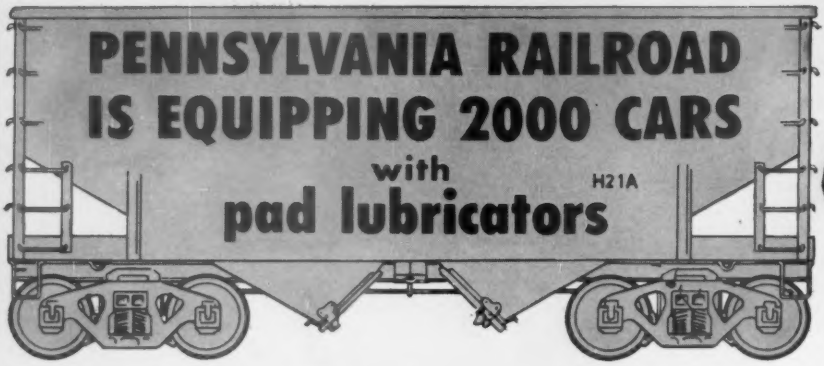

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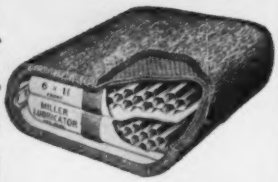

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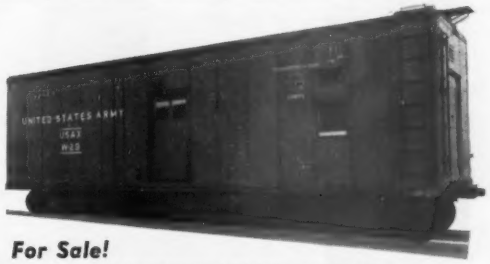

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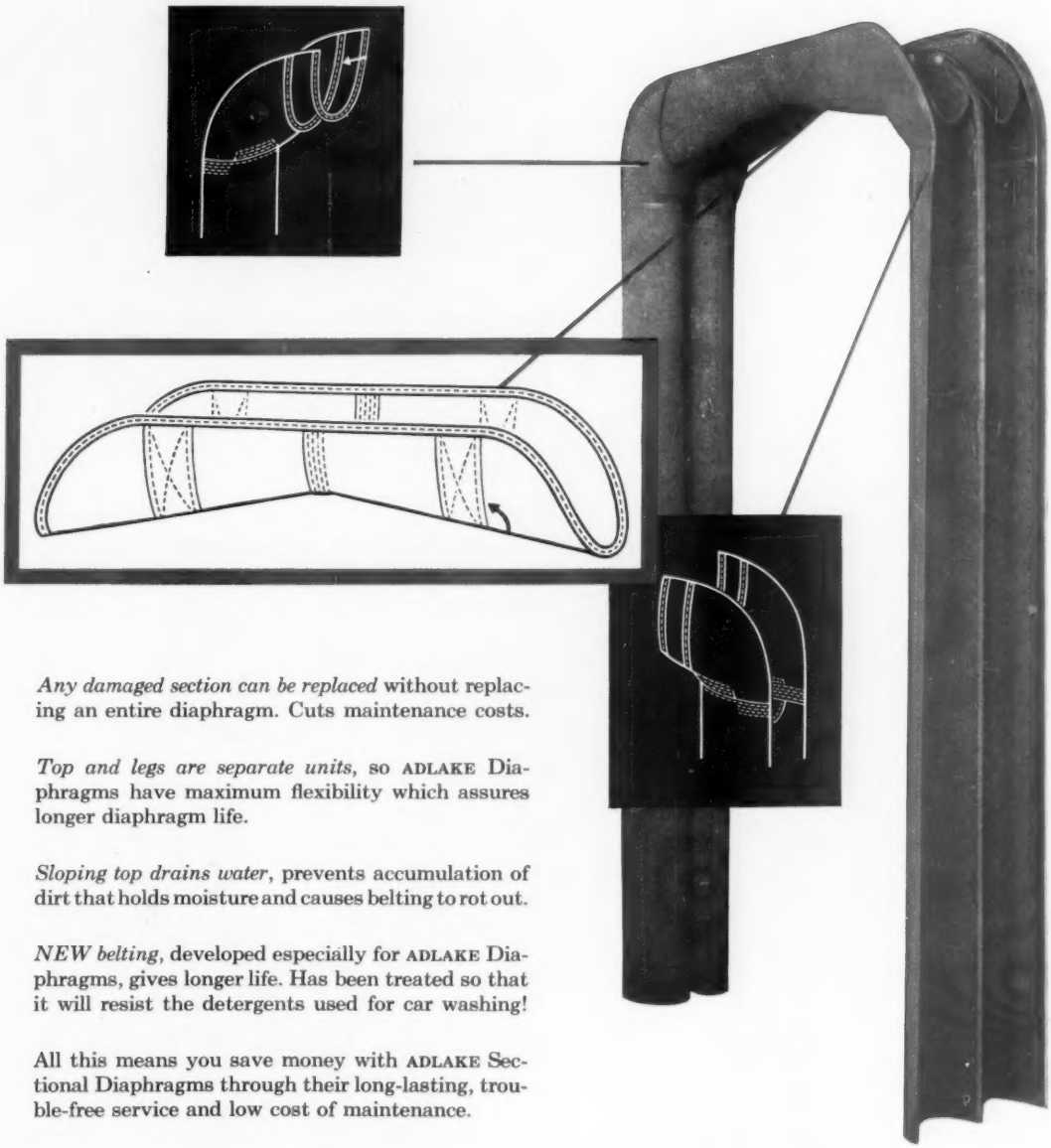

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